Gleanings in Bee Culture

85 years of continuous publication by the same organization.

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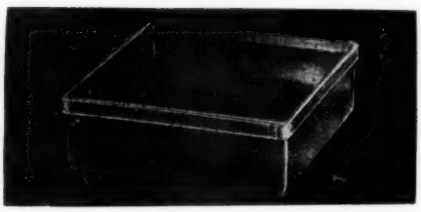

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Monthly HONEY Report

WALTER BARTH, Field Editor

BY THIS TIME all Gleanings' readers are aware of the floods that have plagued Texas in April. The long hard rains brought drought relief but after a while there was so much runoff that much of the water was not reaching the subsoil. Nevertheless Texas beekeepers are in the best spirits in seven years. Reports from west Texas indicate the makings of a good crop, and around Llano, Texas, some honey has already been harvested.

National Scene

East of the Intermountain states honey stocks are light to short and the demand for the remaining lots is sufficiently good to hold the market levels steady in this area. That is not the case on the West Coast, apparently, for in that area numerous lots are reported still unsold. At present the West Coast market is almost stagnant with low prices reported in southern California. This depression in the West Coast honey market is probably responsible for the price cutting in the Northwest. Price discounts on five-pound pails is also reported from Oklahoma.

The poor West Coast market is probably related to the fact that Europe has ample stocks of honey, discontinuance of the premium duty in Germany, and the lower price offerings by Latin American countries. Increased sales efforts by West Coast bottlers and packers could do a lot to relieve the situation.

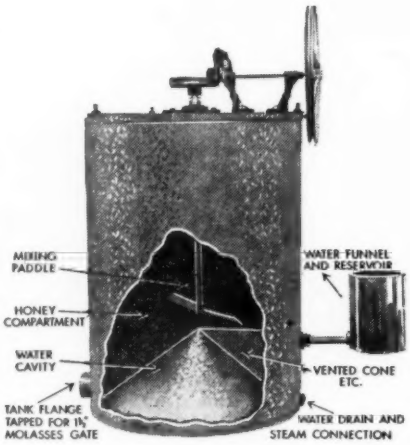
The beeswax market has softened in some areas. It had been rumored that some stocks of African beeswax had been tied up by the closing of the Suez Canal. Whether this is true or not, the price of African wax has decreased somewhat in the last month or so. The wax market in the far West has shown a reduction to approximately 56 cents f.o.b. producer.

The expected orange crop in Florida didn't materialize. Bees in that state were not in the best condition for the flow, and as a result, the colonies built up on the orange flow rather than making a crop. Besides, the citrus bloom was very erratic due to spells of bad weather. The orange crop will be quite short unless late blooms yield heavily. However, prospects look good for a fine gallberry and palmetto flow since moisture conditions have improved.

In California, the other citrus area, prospects are good for an orange crop, and fair for sage and buckwheat. Generally bees and plants seem to be normal in the state except in parts of northern California where poor weather during the almond bloom has retarded colony development.

Looking about the country bees have wintered well generally but in most areas heavy feeding will be necessary. In the East bees were unable to work during fruit bloom and so missed the chance to replenish their dwindling stores. Practically all of the honey is out of the producers' hands. Honey plants look good. While retail sales are slow, prices are remaining steady.

Kelley's Double Boiler



All liquid honey should be heated before it is bottled to prevent granulation. All large packers have high priced equipment to process their honey in but Kelley is the only one to offer low priced honey processing equipment for the small beekeeper and honey packer.

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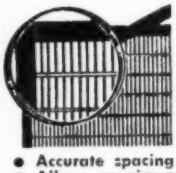

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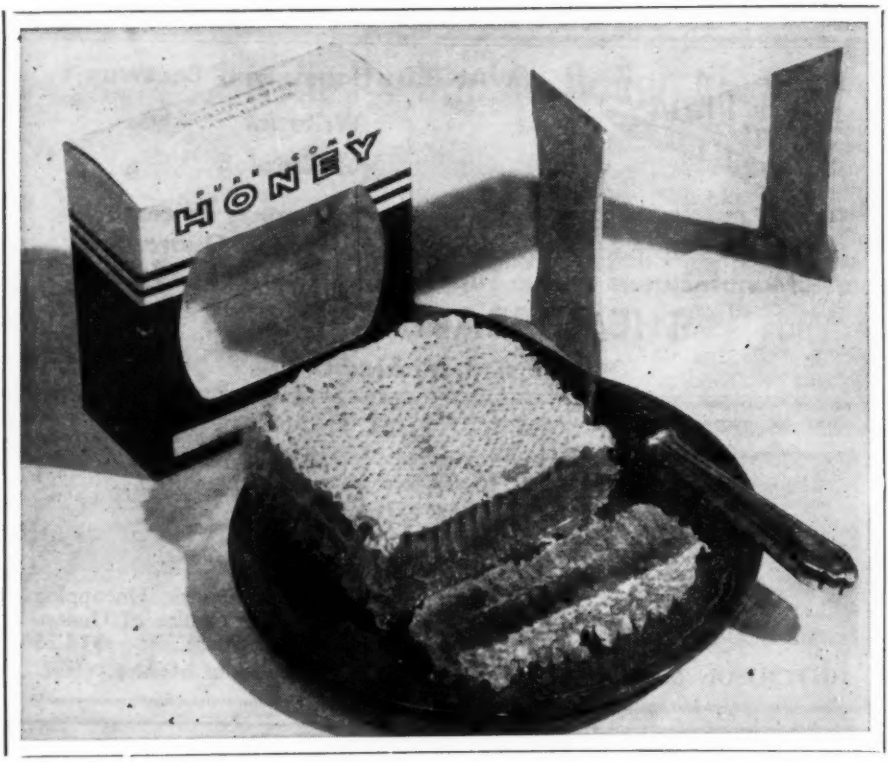

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Bee-Deep in June

by JESSIE HATTER ANDERSON, Liberty, Ky.

NO CALENDAR is needed to tell the bee-lover that June is here, high time of the year for the bees.

The cool ivory fingers of the white sweet-clover beckon from the roadsides where it is growing higher than our heads. And to offer variety with a generous hand, the yellow sweet clover grows there, too, side by side with the white, living candelabra with dozens of golden blossoms standing up over the sturdy branching plant, like so many gleaming candles.

Even at sunset the bees are reluctant to leave. At the end of the day they linger, still swinging gently on the blossoms. We draw nearer to enjoy fully the low hum of a single bee, with its recurring higher note that tells of a welcome nectar flow after the long waiting time of spring, and, before that, winter.

Down by the orchard gate the wild rose opens its clear pink blossoms to greet the morning and the bee. When we pass by at early morning we marvel at the fresh radiance of the newly-opened petals. Their glow reflects the colors of the dawn. Pure pink of an almost unearthly radiance is newly opened and untouched in its early morning freshness. The petals are cupped invitingly towards the powdered gold of the rose's heart, and there a leather-colored bee is resting lightly, already gathering sweets. The thought of wild rose honey is alluring. Next winter, when we taste the honey some snowy morning, this picture of the wild rose clustering at the orchard gate, with a brown bee poised at the heart of the pink and gold petals, will come back to us and again for a fleeting moment we shall be a part of that bee-world of sunrise, June dew, wildrose pink, nectar powder of gold.

A Swarm Comes Out

Today we had our first bee swarm of the season. It was not far from noon. In a chance glance at the window we saw that the air between the window and the plum tree was alive with thousands of bees, zigzagging in a frenzy.

The swarm settled on the largest branch of the plum tree, near the trunk, a long thick cluster of rich live brown. Too high for us to handle without help—my sister and I—one went to bring a helper from we know not where—anyone who could climb, with strong arms and a taste for adventure. The other began collecting hive, frames, and inner board. Just before the help arrived, a roar of farewell sounded high in the air. We ran outside to find the plum tree deserted, the bees gone, no trace of the air-path they took.

The obliging visitor who had come to help us was disappointed. He was a tall, lean, young man from the city's industrial world, a week-end visitor of a neighbor.

"I don't know much about bees," he told us, "but I'm not afraid of them. Helped cut a bee-tree once. They stung me a plenty, but I kept right on eating honey."

When we murmured something of the effect of stings on him, he said, "Sure, it hurts at the time they sting—but I keep right on eating honey." And again he looked with regret at the smooth bark of the plum tree where the swarm of bees had been. He would be down from the city often, he reminded us, and would be glad to help us any time he could if by chance there were other swarms at the time he was visiting in the country.

He left us feeling that we had made a new friend who would come into our lives again. We liked his cheerful laugh, his long, lithe body, strong arms, and willing spirit. A square of honey for his breakfast may seal the new friendship.

While cutting bee-trees is not the sort of experience that meets with our approval, we think he is the kind of young man that would approve of such folly once he had a better understanding of bees.

We think of our own bees that have just left us, and may be selecting now some large hollow tree far back on the wooded hills for their new home. If they do, we hope that no thoughtless person strolling through the woodland, and seeing them at work, will be so foolish as to come back with saw or ax and cut the tree in the false hope that they will get a rich store of honey. The garage-man at the edge of town could tell them, as he told us, of his experience cutting a tree with bees in it. After he had lost the larger part of a day from his shop, going on such an adventure in ignorance, the gallon or so of honey, mixed with young brood and crushed dying bees, was not worth it.

Already the first customers of the season are coming. A tourist stopped his car when he saw the white hives on the slope above our house. Genuine old-time wildflower honey in the comb is hard to find, he says, unless one finds a real bee-lover. Too slow for the younger generation, he thinks; they don't want to take time for comb honey.

There is a joy in selling the honey in the comb that cannot be found in offering extracted honey to customers. We like cutting the blocks to appear to best advantage in the containers so that the prospective buyer may see at first glance the beauty of detail in the work of the bees.

Sometimes a purchase of honey indicates the feelings of the human heart as subtly as the slogan-writer had in mind when he wrote, "Say it with flowers." For example, when our dentist, an old friend of year's standing had a lapse in judgment and pulled a perfectly sound tooth for us, he did not tell us how sorry he was—maybe doctors and dentists are trained to say nothing about their errors—but the next morning the mail brought us an order from him for a ten-dollar container of our comb honey. It was his dignified way of saying, "I'm sorry". We hope that he will not have occasion to repeat the order.

One learns the preferences of honey customers we have had before, and we pack the honey at this busy season with some of these friends in mind, taking time to add a brief description to labels to aid us in pleasing all who buy. One likes his honey "rich and dark, with a flavor of bee-bread now and then". Another asks that it be bright gold. Another, that it be "pale and tender". There is a velvety textured kind we watch for each season. It is a favorite of one of our customers in town not far away. She buys it for gifts at Christmas, as well as for her family. We try to please them all, but how we do like the customer who says, "It is all different, but it is all good!"

The month rushes on with new duties pushing on the heels of unfinished work. The air breathes June, with its whiffs of mint in running waters. The day sings June in alsike-sprigged meadows. The night whispers June when we walk near the apiary and hear the deep hum of masses of bees clustered outside the hives for comfort.

The nectar flow progresses from the late fruit blossoms to the clovers. High on the wooded hills there is a myriad of blossoms to offer the bees treasure for wildflower honey. Tall poplars with a gorgeous array of flowers. Forest borders of sourwood with festoons of dainty white buds opening from day to day.

The bees make the most of every hour. June will not linger. The slender crescent of a new moon appears low in the sky, the honey moon of the bees, signal that June is going off the stage.

How We Handle Our Honey Crop

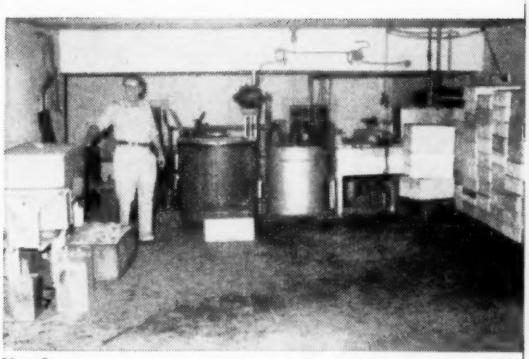
by MICHAEL BOCZKO, Lisbon, N. Y.

WHEN YOU look at these pictures, taken inside my honey house, you have every right to ask for an apology. It all started with a large storage tank-full of crystallized honey, and an awful mess.

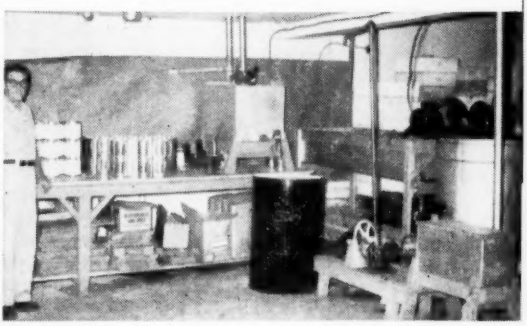
About my bees, and our climate (which hardly deserves mentioning this year) I will tell some other time. But, now, let us untangle the bewildering maze of pipes, tanks, and wires, to show how we handle the crop from the time the full (often not very full) supers are unloaded, until the honey is packed and ready for the market.

Picture 1. The foreground, where the truck is backed in with the load. And from right to left; full extracting supers. On the wall above the supers, a double socket from which one wire goes to the Macy's uncapping knife, the other to the honey pump. Next is the uncapping trough with three large wire baskets. (It will show up better from the other side, on picture No. 2). Next is the Root's 24-frame extractor—a very reliable old work horse, and at the end of the day, it whirl dries the day's cappings, too. Alongside of the Root's is the comparatively new Woodman's 30-frame job. Two extractors of the size of these I believe is more practical than one 50-frame one, for while one is running, I fill the other and do not have to handle combs over again from the Merry-go-round. Next to the Woodman, that's me, my right hand resting on the B.L.M. electric capping melter, and a tubful of whirl-dried cappings on the floor ready for rendering. This is what you see when you enter my honey house.

Picture 2 was taken from the opposite direction, where we pack. The level of the floor here is two feet lower than the first part, and we have taken advantage of it. From the right to the left again, it shows the sump, with the automatic switch for the pump. The



No. 1

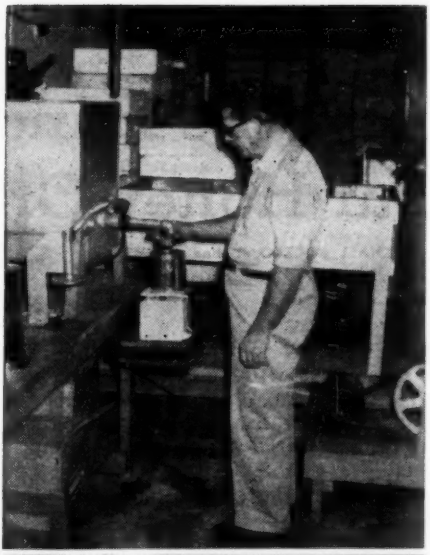


No. 2

No. 3

uncapping trough and both extractors are connected to the sump from which the honey is pumped upstairs to the clarifier, shown in Picture No. 3 (of which more later). From the clarifier, the honey drops into the two storage tanks, and they are also upstairs (see Picture 3). On the right hand side of the long packing table stands the packing tank, which holds and heats 360 pounds of honey at a time. This tank is water-jacketed on all four sides and the bottom, and heated with two thermostatically controlled electric heating units to 160 degrees F.

Right here, I might as well tell that everything is heated with electricity, and the desired temperature for the different jobs is controlled with ther-



No. 4

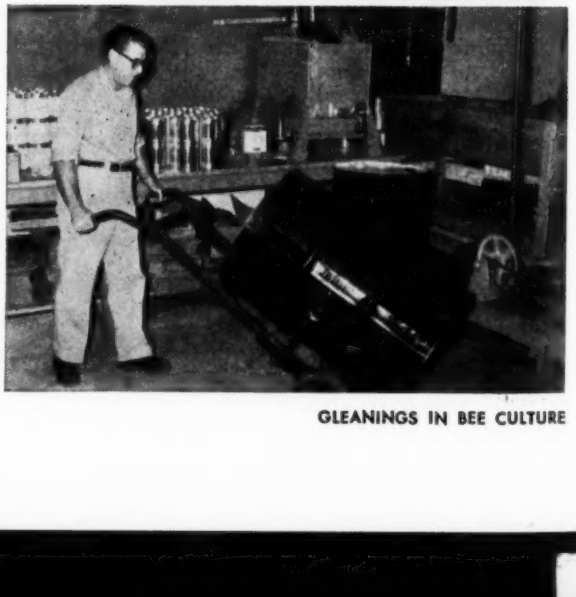
mostats. We have no steam plant in the honey house. Above the packing tank are the two pipes with large honey gates from the storage tanks upstairs. On the floor, under the spout of the packing tank is a 55-gallon drum, which we happened to have full at the time. Fastened to the table next is the 5-pound pail capper, a very handy gadget if one has to fill lots of 5-pound pails with honey 160 degrees F.

Pictures No. 4, filling 5-pound pails; No. 5, filling 55-gallon drums, No. 6 shows how much easier it is to handle drums than 60's; No. 7 shows part of our retail mail order business; No. 8, the B.L.M. electric capping melter and part of this year's wax, ready for the market.

Now, let's go back to the clarifier

No. 5

(Picture 3). I always found straining h o n e y through cheescloth, from extractor to storage tank unsatisfactory. The strainer usually plugs up even if the honey flows good, and has to be changed constantly. When the honey is real heavy, or as it often happens, starts crystallizing in the combs, it just will not go through the cheesecloth.



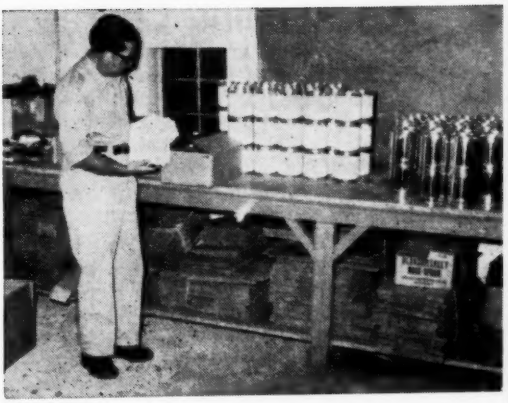
No. 6

We find "baffling" the simplest, and most satisfactory, whether we fill drums for our Co-Op., or small containers for the mail orders. The clarifier, or baffling tank, is water-jacketed, and the temperature of the honey for best results should be 110 degrees F., or higher, according to the volume of honey going through the clarifier. From the clarifier the honey drops into the two storage tanks, from where we let it downstairs into the packing tank, where it will be heated to 160 degrees F. for a short time before it is packed.

Last, but not least, the "B.L.M. Waxmaster" electric capping melter will speak for itself, when you look at Picture 8.

Before we had this melter, cappings used to accumulate, waiting to be taken care of in some future date. It used to be an unsightly mess in the honey house, difficult to handle when it turned cold in the fall, so we usually went deer hunting instead. Now, with this melter, the cappings are rendered and taken care of while we extract. And the day after we are through extracting, the nice clean light cakes of wax too are ready for the market. The same applies to the burr comb scrappings also, of which we read so much in bee journals. This melter will save every bit of honey from the cappings, it will be somewhat darkened but it is salable, or it can be fed back to the bees in fall or spring.

We extract an average of 3,000 pounds of honey per day, and could do better if we worked faster, or longer. If I operated a real big outfit, I would prefer the same equipment—set up the same way, only everything would have to be a few sizes larger.



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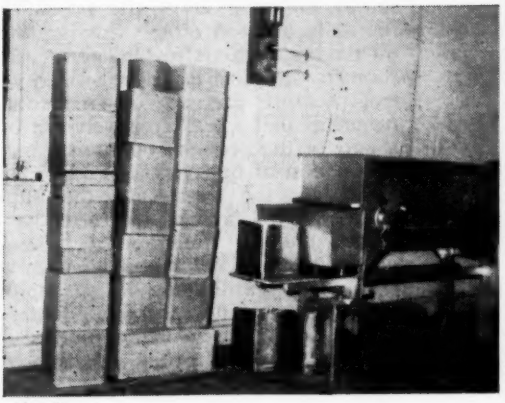


No. 8

SOUTH TEXAS BEE SCHOOL

by WALTER BARTH

THE FIRST South Texas Beekeeping School will be held at 1:30 p.m., Sunday, June 9th, on the grounds next to The A. I. Root Co. of Texas, 537 South Flores Street, San Antonio, Texas. Everyone is welcome. Prizes and the latest beekeeping information will be available free. Here are some of the subjects to be covered: Bee Equipment and How to Use It; How to Handle Bees; Installing Package Bees; Local Honey Plants; Catching Swarms; Swarm Control; Harvesting the Honey Crop; Spring, Summer and Fall Management of the Texas Apiary.

A package of Italian honeybees will be installed, and sometime during the day these bees and the complete hive will be given away as the grand prize of the day. Come and see the latest in beekeeping ideas.

Beekeeping Chores for June

by HOWARD PIKE, Rhode Island Apiary Inspector

THE MAIN problems for this month have to do with swarm control and increased honey production. These involve the giving of increased or ample room, both for the queen in the brood nest and also for honey storage in supers, ample ventilation, and perhaps some manipulation of the brood; but the main thing in most yards is putting on more supers. After all, giving more room is the most effective swarm control measure and any swarm control measures that work effectively are only a part of the problem of increasing the production of honey.

To get the bees into the supers promptly and to be most effective in swarm control, supers must be made attractive by being equipped with full sheets of wax foundation or supplied with drawn combs. After entrances of strong colonies have been enlarged and an ample number of supers given, colonies that persist in preparing to swarm by building queen cells can usually be stopped by the proper manipulation of the hives or of the brood. Colonies with old or failing queens are the hardest controlled.

When queen cells are found in populous colonies, they must be destroyed and more room given. I have never found any easy way to determine which colonies have queen cells except to open all hives and look methodically. It does help, when one is crowded for time, to note the entrance conditions. Any colonies with bees massed at the entrance are most likely to have queen cells or need room. After the queen cells are destroyed the beekeeper then has a choice of using one or the other of the best-known systems of swarm control. A system of relocation of hives or the old reliable Demaree system or some modification of it are suggested as being most effective, but if you know of a plan that works for you, use it.

In the relocation of hives method, assuming that there is no AFB in the apiary and that all swarm cells are first removed, the colony preparing to swarm is picked up and set on the stand of a weaker colony in the yard. The weak colony is set on the stand of the strong one. This is done while the bees are flying, preferably around noon-time. This exchange will tend to equalize the field forces. The weak colony will be built up but the strong one will lose more field bees than it will gain and should settle down to honey production. This system has the advantage of handling whole hives and even double stories, rather than mere frames of brood and concentrating on the colonies that need attention first when time is limited or one is rushed.

In the Demaree System, the queen and at least one frame of brood is placed in a hive body on the old stand, the full complement of good drawn combs or full frames of foundation (preferably the former) are put in. A queen excluder is then put in place on this body. Plenty of extracting supers with combs or full sheets of foundation are next added. After all queen cells are removed in the brood that remains, these bodies of brood are set on top of the stack and the cover put on. It may be necessary to shake the bees from frames of brood to make sure no queen cells are missed. This elevation of the brood will nearly always result in an even distribution of the bees up through the stack and will generally knock all swarming out of a colony for the rest of the season unless one is in a locality where there is an unusually heavy fall flow. It does this because it relieves the congestion in the brood nest where the queen is. It will also tend to secure the maximum honey crop, for as the brood emerges from the combs above the excluder, all cells

will be filled with new honey if there is any to be secured.

To make this system an entire success, several hive bodies and supers of combs are required per colony in a good season. I know of no way to make this system a success, unless one has ample equipment for storage and curing the raw nectar within the hive and a queen excluder for every colony so treated. It also requires some heavy lifting to remove any queen cells in the top bodies of brood about 10 days after Demareeing, but it does get results and is worth the effort.

Destroying Queen Cells in the Elevated Brood

Most beekeepers prefer to destroy any queen cells built in the stories of brood that have been "put up" unless they wish to make increase, using the sealed queen cells for making nuclei or for new colonies. So, with nicely sealed queen cells you have a choice here of making a "set off" for another colony or increasing the crop by destroying the queen cells in the elevated brood, provided whatever you plan, it is carried out between the 8th and 10th day from the time the brood was elevated or after the newly built cells are sealed but before any virgins emerge.

After the queen cells are destroyed, provision can safely be made for the escape of the drones above the excluder. The supers can be "staggered" or a small opening made by using small blocks of wood. Unless some provision is made for the imprisoned drones to escape they will perish, clogging up the excluder, shutting off the ventilation and preventing free access of the bees to the supers.

Bees-Ness Deal

Beekeepers clap their hands on a bargain in traditional fashion at the yearly bee-market at Veenendaal, Holland. The beekeeper at left puffs on a pipe through a hole in his visor. — Wide World Photo.

XUM

Honey Extracting on a Small Scale

by G. F. TOWNSEND and A. Adie, Dept. of Apiculture, Ontario Agricultural College

ALL EXTRACTED honey must be well strained whether it is packed by the hobbyist or the commercial operator. For an investment little greater than the cost of establishing four colonies of bees, it is possible to assemble the total equipment required for extracting and straining honey at a rate of approximately 100 pounds per hour.

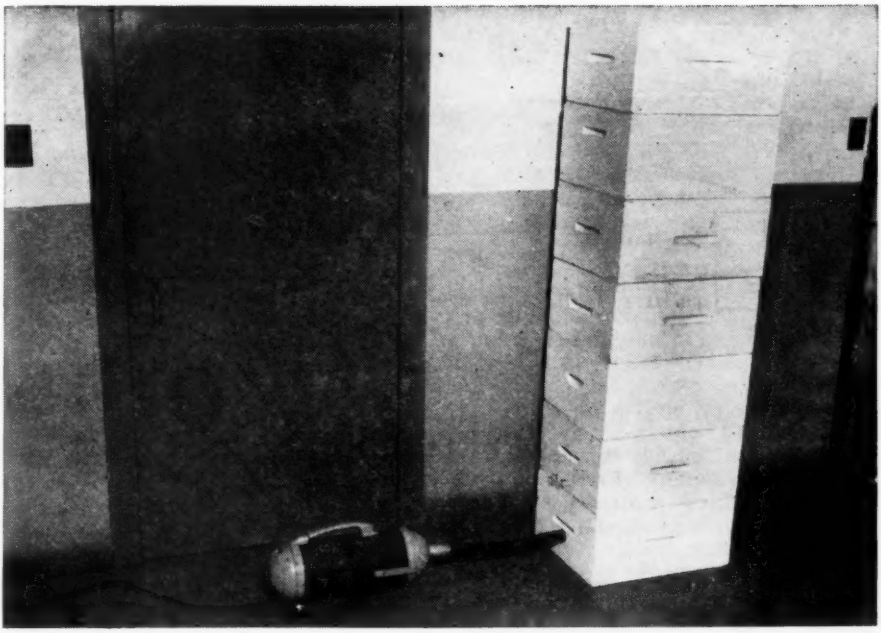
Warming and Removal of Moisture

All honey should be less than 17.8 per cent moisture before it is extracted. This is necessary in order to avoid fermentation and to meet the requirements of a No. 1 honey. It is also advisable to warm the honey in the combs to help with the extracting of the honey from the combs. Both these requirements can be met with the aid of a good vacuum cleaner. Cut a hole in a super just large enough to permit the entry of the vacuum hose. Above this super stack seven or eight supers of honey and turn on the vacuum so that it will force air upwards through the supers. The vacuum cleaner will force a large volume of warm dry air through the combs removing as much as 1 to 2 per cent moisture overnight.

Uncapping

The removal of the cappings from the honeycomb may be carried out by a hand electric knife, or a steam knife heated by a small boiler.

The simplest uncapping box is made from a super on the bottom of which is fastened a queen excluder. This is supported over a metal pan which drains into a pail. The cappings will drain quite readily in a box of this type.



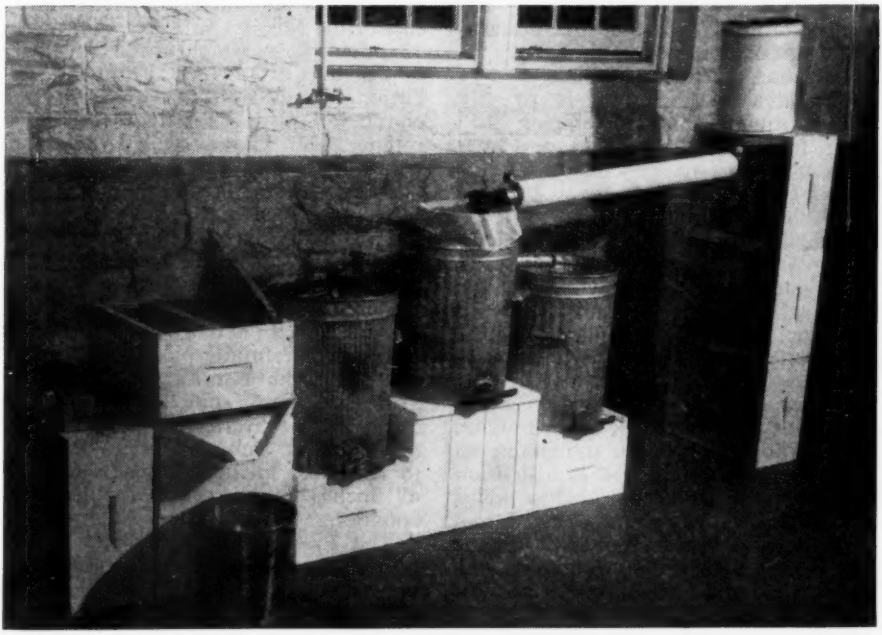
Extracting

Small two and three frame extractors are available at most bee supply houses. These extractors may be operated by hand or equipped with a small motor.

Straining

To facilitate the straining of honey it is necessary to remove the bulk of the coarse material and warm the honey to 100 degrees F. or preferably 110

(Continued on page 377)



Beekeeping in North Carolina

reported by W. A. STEPHEN, Extension Beekeeper

NORTH CAROLINA has been defined as a valley of humiliation between two mountains of conceit, the last phrase referring to Virginia and South Carolina. Whether the description is apt or not, it gives the geographical location of North Carolina.

The area of the state is roughly 50,000 square miles, averaging 100 miles from north to south and 500 miles from east to west. North Carolina is one of the southern states, but not in the Deep South. It has an average climate, typical of the warm temperate zone. There is a great diversity in climate, however, influenced by the topography, with lesser effects due to the Atlantic Ocean.

Because of its comparative narrowness north and south, there is little variation caused by latitude. From west to east, however, the state stretches out in a long slope. The mountains on the west may be regarded as a division of the southern Appalachians. This section is a high plateau flaring out from north to south, bordered on the east by the Blue Ridge Mountains and, towards the southern edge, on the west by the Great Smokies. There are numerous cross ranges and many high peaks. One is Mount Mitchell with an elevation of 6,684 feet, the highest peak east of the Mississippi River. There are 43 other peaks which attain an elevation of over 6,000 feet. From the beekeeping standpoint, this area may be considered distinct. Farther east is a rolling plain known as the Piedmont which gives way to the more level Coastal Plain in the east.

The elevation of the mountain range has a modifying influence on the climate giving pleasant summer weather, but also low temperatures during the winter season. It is here, too, that they receive maximum and minimum amounts of rainfall. Near the southern boundary, the rainfall may reach 80 inches, or more, annually while within 50 miles, the average is less than half this amount. Snowfall varies from 10 to 12 inches in the southern section to 47 inches in the northern mountain counties.

The Piedmont is the driest section of the state, but the temperatures are very much the same as those in the

Coastal Plains. The average annual temperature may vary as much as 20 degrees F. There are thermal belts which are more pronounced in North Carolina than in any other place in the eastern United States, but these have little effect on beekeeping. In the extreme southeastern part of the state there is a section where the vegetation is typically semi-tropical with a mean temperature of about 64 degrees F. Temperatures rarely go as low as zero and then only during unusually cold periods.

North Carolina is considered to be rather sunny with an average annual sunshine of 60 percent of possible. During the average summer, maximum temperatures reach 100 degrees F. or higher on only two or three days. The average relative humidity is about 71 degrees F. With the exception of cyclonic storms, North Carolina is not subject to many winds. Physiographically, North Carolina lies across three of the so-called major provinces of the United States. The Coastal Plain includes roughly one-half of the state, extending inwards about 150 miles. Here there is a gradual rise in elevation to about 200 to 300 feet above sea level. The Coastal Plain is divided into two natural divisions, an inner portion which is gently rolling and well drained and an outer tide water region which is lower lying and in part swampy. It is in the outer portion of the coastal plain that one finds the best beekeeping territory.

The first plants to be established on the ocean side are runner oak and yaupon (**Ilex caroliniana**), the latter of which belongs to the holly family and is considered a minor honey plant. Behind this protective barrier, among other plants, are the gallberries (**Ilex glabra and I. lucida**), American holly (**Ilex olpaca**), sweet bay (**Magnolia virginiana**), winged sumac and French mulberry (**Cal**[1]**icorpa americana**). There are also such vines as green brier, (**Smilax** sp.) and wild grape (**Vitis** sp.), which under certain circumstances are minor honey producing plants. In this region, as a whole, about 64 per cent of the total area is covered with forest. Here are located pocosins, poorly drained peat and muck soils frequently burnt over, but permanently saturated with water. The area was formerly forested with some cypress, white cedar, and other valuable trees. Now we find black gum (**Nyssa biflora**), swamp red maple (**Acer rubrum** var.); and red bay (**Persea Borbonia**) among the dominant species. The main shrubs include gallberries, ti-ti (**Cyrilla racemiflora**) and huckleberries (**Gaylussacia** spp.). On the drier areas may be found goldenrods, (**Solidago** spp.) and asters (**Aster** spp.). Frequent flooding of certain areas which causes them to be water logged through most of the year gives rise to water tolerant species such as cypress, swamp black gum (**Nyssa biflora**), tupelo gum (**Nyssa aquatica**), and swamp red maple (**Acer rubrum** var.) while on a little higher land will be found the red maple (**Acer rubrum**), black gum with shrubs such as elderberry (**Sambucus camadensis**), button bush (**Cephalanthus oxidentalis**), and sourwood (**Oxydendrum arboreum**). Ground cover may include green brier, wild grape, and poison ivy (**Rhus toxicodendron**). It may be questionable whether cypress is worked for pollen, but unquestionably there are vast amounts produced and liberated early in the year. Along the rivers leading through the Coastal Plain and into the Piedmont are black gum, red maple, alder (**Alnus** spp.) and willows (**Salix**

W. A. Stephen, taken during the Southern States Conference meeting in October, 1955, by Jack Deyell at Klingman's Dome.

XUM

spp.) which provides an early supply of pollen for bees. Here also is found the tulip tree or yellow poplar (**Liriodendron tulipifera**). Black berries (**Rubus** spp.) also are important in these areas. Holly (**Ilex** spp.), red-bud (**Cercis canadensis**), and sourwood are also included.

About 16 per cent of the total land area, comprising 5.6 million acres, makes up the mountain area. There is a great variety of species in this area, their value as nectar sources depending on such factors as lumbering, fires, moisture conditions, slope, and elevation. Some years ago about 25 per cent of the growth in this area was chestnut. A blight, however, killed this outright in the late 20's and today chestnut timber is still being harvested, wormy chestnut being one of the favorite woods for paneling. Dead standing trees are still a prominent part of timber resources of this region. Yellow poplar, sugar maple (**Acer saccharum**), black locust (**Robinia pseudacacia**), service berry (**Amalenchier canadensis**), sassafras (**Sassafras variifolium**), sumac (**Rhus** spp.), and **chinquapin** (**Castanea pumila**) are sources of nectar. Then, of course, sourwood is predominant as a honey plant throughout the mountains. In the coves may be found some basswoods (**Tilia** spp.), locally known as linn.

Sourwood Yields a Surplus Periodically

In cut-over areas, sourwood is one of the first trees to come back. Although this tree grows throughout the whole of North Carolina, only once in a long while does it yield honey in quantity elsewhere than in the mountains. Even there it is said to yield abundantly only once in every three to five years, although observations point to the fact that colonies may not be in a condition to gather the nectar. A dearth of nectar preceding the blooming period of late June and July often leaves the bees in condition unfit for storing a surplus.

While cotton (**Gossypium**) is grown extensively throughout the upper Coastal Plain and Piedmont Counties, it does not yield an abundance of nectar here as in the dark soils of Arkansas and Texas. In two mountain areas, apples are grown extensively and in the Sand Hills area of the upper Coastal Plain there are many peach orchards. A shrub that grows throughout the area and sometimes referred to as Hercules-Club, is known to beekeepers as prickly ash (**Aralia spinosa**). Then, there are wild plums, pears, and cherries as well as the persimmon (**Diospyros virginiana**) and smart weeds (**Polygonum** spp.). There are some cultivated plants which may be considered as minor sources of nectar throughout the whole area, but may become major sources in certain localities such as the vetches, clovers, and soybeans. One that occasionally yields abundantly in the Coastal Plain is the pepper bush (**Clethra alnifolia**).

The terms marginal and sub-marginal are relative terms usually referring to economical operations. To the eye of a big western operator most of the beekeeping in North Carolina, even the best of it, would be considered marginal or less. Nevertheless there is sufficient return to keep 30,000 North Carolina beekeepers interested in their hobby. A few are full-time honey producers and one is a nationally known breeder and shipper of package bees and queens. Several others find profitable returns from queen rearing and package bee production on a small scale.

While there is a greater concentration of bees in the upper Piedmont and in the mountains, there are many colonies in the Coastal Plain where the newer knowledge of winter build-up can make honey production profitable.

"I know the bee inspector is comin', but I doubt if he cares if the place is that neat!"

A & Z Library

Cumberland Mountaineers and Honeybees

by GEORGE H. REA, Reynoldsville, Pa.

THE COUNTY AGENT'S car chugged merrily along the rough road in the heart of the Cumberland Mountains. The sun was hot that mid-summer afternoon and conversation lagged. We both felt more like resting than working after several visits where the bees were all kept in log gums or rough box hives. To examine the colonies in such hives was difficult, and some of the men were not cooperative. Two or three of the several beekeepers we had visited expressed some interest and talked freely. This gave us some encouragement, but the outlook for doing much extension work here was not good.

This was the country where strangers don't knock on the front door but call from the road until someone replies. At one place we asked where the man was and the woman replied, "I don't jest know but he went back on the mountin". "How soon will he return?" Bill, the county agent, asked after he had explained to her who we were and that we just wanted to visit about the bees. She closed the door and disappeared inside the house. This gave us a chance to observe many large log gums under trees at the side of the house. There seemed to be little activity, but large clusters of bees were hanging on the outside of the gums. The sourwood honey flow was past, and there was little if any nectar to be found in the mountains now.

Just how the woman might have communicated with her husband we did not know, but in a short time he came around from back of the house with a rifle in the crook of his arm. He was pleasant enough, and after we had walked among his bees and talked about them and invited him to a local beekeepers' meeting for that afternoon, we went on our way.

Bill had just said that perhaps we should return to his office for a bit of rest and have lunch before the meeting scheduled for 2:00 P.M. at an abandoned sawmill down the valley about two miles from the little town which was also the county seat. Then he said, "George, there is a character just around the turn of the mountain ahead of us that I would like you to meet. He keeps some bees in gums, and he is one of the talkingest men I've ever met. He is sure to tell us some interesting bee stories. We will have just about time for that and perhaps take some rest while doing so." It was about one mile to his place. The setting was wonderful: A well-built log house under the trees on the mountainside; a wide lawn down to the road, almost grassless but with no weeds; a beautiful view out over a wide valley below. Under a sweet gum tree on the side of the lawn we saw him sprawled out in the shade in serene repose.

It was evident that he saw us and that he knew Bill, and perhaps he knew we were to come that morning. However, he did not move but called out, "Come on up". It was a friendly greeting we often heard in the mountains. Sometimes we were warned, "Stranger, that man is uppity an' if I were you I wouldn't go up thar". One time, and that is another story, we almost met tragedy by disregarding such a warning.

We welcomed the chance for shade and a little rest, and it turned out to be a most interesting experience. He rolled over on his side and began to talk. We sat down near him, and he talked on with few interruptions. It was a rare opportunity to let the other fellow do the talking. It was observed that his gums* at the other side of the lawn with briers and weeds grown so high that the hives could hardly be seen, and the bees had to struggle through them

* Note: Gum is a common name for any kind of a bee hive in some areas. The name probably stems from the use of hollow gum tree log hives.

as best they could.

In telling his stories, I will use but little of the picturesque language of this interesting mountain man. Few, if any, "strangers" do well in the attempt to do so. Without excuse for the weeds and briers he called our attention to them as a good thing because they shaded the hives from the hot sun and kept it dark so that the bees would not fly and wear themselves out looking for honey when there was none to be found. The best reason was that the weeds and briers kept the bees from seeing each other's hives so well and thus prevented them from fighting. Any informed beekeeper will, of course, discount both "reasons" as futile.

When bees swarm, if you want them to stay, he told us, you must put them in a clean hive. If it is an old hive it must be scraped and cleaned of all dirt and then rubbed inside with "three kinds of leaves", and the bees will never go away. "What three kinds of leaves?" I asked. "Any kind—makes no difference," was the reply.

When a bee stings you "it won't hurt or swell" if you take three kinds of leaves and crush them together and rub the juice on the place.

When bees swarm and act like they wanted to go to the mountain "clatter some old pans or buckets, even shoutin' helps some" and they will come down right where you want them and go into your gum.

His best story, and what I think is the top legend of all in beekeeping and one which I had never heard, came after we indicated that we must leave and had invited him to the afternoon meeting. "Wait a bit, stranger. I want to tell you something about bees. You know when the Lord God made Heaven and earth he made the honeybee. And the honeybee is the most faithful and obedient and industrious of all God's creatures. But God found the honeybee working on the Sabbath Day and He said to the honeybee, 'Honeybee, the Sabbath is a day of rest and you must not work in it.' But he was so industrious that he could not stop working. Then the Lord God said to the honeybee, 'I'll make a covenant with you, you may work on all of the flowers but the honeysuckle on the Sabbath Day. When I find that you do not work on the honeysuckle blossoms on the Sabbath then I will know that you are obedient to me.' " Placing a hand on my shoulder he looked into my eyes and said impressively, "Stranger, to this day you'll never find a honeybee working on the honeysuckle blossoms on the Sabbath Day." On our way down the mountain Bill grinned and asked, "What about this honeysuckle business?" I replied, "Bees rarely if ever are found on blossoms of the common honeysuckle vine found in this area".

That hot afternoon the few men who came to the meeting, sat lazily about on boards and pieces of discarded machinery under the welcome shade of the old sawmill shed. The owner of the bees lived nearby, and his bees were in plain sight on the hillside near the meeting place. They were in log gums and boxes, about a dozen of them. Bill explained the reasons for a beekeepers' meeting and introduced me. I soon found myself in just about the deepest water I ever got into in trying to talk to a group, unless it was at another similar beekeepers' meeting several years before in the Ozark country. I had failed to take along some modern equipment about which to talk and exhibit. Not one of them had ever seen a modern bee hive, comb foundation, or other equipment. In fact, Bill had told me that if there was one modern beehive in the county he had never seen it. To discuss with them how to transfer their bees into new hives and how to manage the colonies for more profitable honey production was difficult. They were, however, interested in the reasons why and asked many questions about the queen bee, and I told them many of the interesting facts about the habits of the bees.

After suggesting that Bill send to the bee supply manufacturers for bee supply catalogs and then buy at least one new hive and set it up following the instructions, I thought they might get along fairly well.

The last phase of this meeting was about transferring their bees to the new hives. I had reasons to believe that there was no American foulbrood in that area. In the many years of my experiences in backward areas, I have never found this disease in the bees until someone had moved bees or equip-

ment in from an infected area. This destructive disease follows the advent of modern beekeeping. Therefore, I advised them as I had advised others for many years to adopt the easy way out while transferring their bees. I first asked them about how many of their "gums" swarmed each year. The expected reply was just about all of them. I then advised them to purchase one or two new hives the first year and put the new swarms in them. They would then have some knowledge of the new equipment and how to manage it with little expense. The next year they could buy more new hives and continue that way until they had as many colonies in new hives as they wanted. Each year after the new swarm is in a new hive, remove all the good honey for home use from the old gum and destroy the gum by burning, or allow it to stand and cast a second swarm before destroying it. This method has been found effective. It saves a lot of messy cutting of combs, bee stings, and robbing. If the combs were transferred into the new hive there still would be a lot of old and objectionable combs to be replaced later. Bees that swarm at least the second time in one year rarely produce any honey anyway, and the old gum is worth little and is better out of the way. This was all explained to them.

A happy sequel to this story occurred when some years later, three men made themselves known to me at the state beekeepers' meeting many miles away. One was the owner of the place of this story, and the other two were neighbors who had attended that meeting. They were interested enough to travel all that distance to learn what they could and to tell me that they had followed that plan and now had all of their bees in new hives and were pleased with their fine sourwood honey crop that year.

Jody Baxter doesn't like pickles.

Jody Likes Honey Better than Pickles

LITTLE "JODY" BAXTER, granddaughter of L. F. Baxter, is tasting a piece of dill pickle and the expression on her face plainly says "I like honey better than pickles"; and she ought to know, for she is the daughter of William E. Baxter, a beekeeper who makes a good living from his bees. His father, the writer, got his first swarm of bees in July of 1914, and his first knowledge of beekeeping from an old issue of Gleanings in Bee Culture found in the packing of the first bee hive he ever bought.—Leroy F. Baxter, Blair, Neb.

No. 1. Section through entrance, the passage to the excavation, and the excavation containing the nest surrounded with its envelope.

Yellow Jacket's Nest near Beehives

by FRANK K. SMITH, Pueblo, Colo.

ABOUT THE first of October, 1955, Mr. G. A. Pauli of Pueblo, Colorado, called my attention to a nest of yellow jackets in his yard. The species was determined by Dr. R. R. Dreisbach as **Vespula pennsylvanica** (Sauss.). The photographs which accompany this article were made by Mr. Pauli, Pueblo, Colorado.

The nest was about ten inches underground. The passage down to the nest was about three-fourths of an inch in diameter and lined with a plaster of mud. The entrance at the surface was through a dome-like roof of mud about three inches wide, four long, and two and a half high. The ceiling of the excavation containing the nest was plas-

tered with mud. The paper envelop surrounding the combs was suspended from the ceiling by about a dozen tough columns of paper. All the mud used in building the nest was a mixture of the earth of the excavation with the saliva of the yellow jackets. The envelope consisted of irregularly overlapping pieces of paper cemented together with dead air spaces between them. The maximum circumference of the nest was about 30 inches.

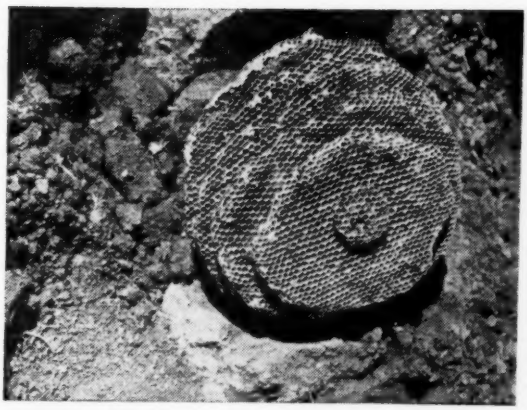
There were eight layers of comb. Only seven are visible in the picture made with part of the envelope cut away. Numerous scattered columns of paper, each about 1/32 of an inch in diameter, fastened the layers to each other and to the top of the envelope. The top three layers consisted of cells, measuring about 5.5 to the inch, in which drones and workers were reared. There were 5,073 of them in the nest. The bottom five layers consisted of cells in which queens were reared with

No. 2. The same as No. 1 with the exception that part of the envelope is cut away so that all but the eighth comb layer are visible.

the exception that there were 87 cells of drone-worker size near the center of the fourth layer from the top. There were 4,514 queen cells measuring about 4.15 cells to the inch.

The entrance was covered at nights and during bad weather. November 15 and 16 were the coldest on record locally for those dates. On the 15th the low was -4 degrees F. and on the 16th it was -11. The high on the 17th was only 20.

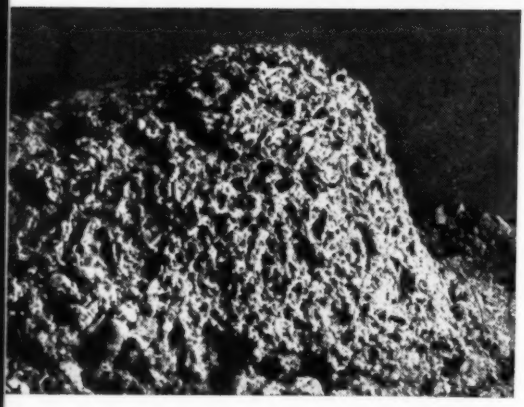
Shortly before and after these dates the yellow jackets carried dead bees



No. 3. View of the lower surface of the combs removed from the envelope.

from the ground around the hives, 30 to 60 feet away, to their nest. They made frequent forays into hives for honey. Sometimes, but not always, they were chased out with bees in hot pursuit. At times dead yellow jackets were seen around hives and at others they were seen barely moving near a hive entrance as if reacting to stings. On

No. 4. Mound over entrance showing some of the yellow jackets.



November 28 when the temperature was 33 degrees F. they were seen entering a hive. On November 25, when some bees were flying, 23 yellow jackets were caught in about 40 minutes as they were entering or leaving a hive. In October these yellow jackets and bees fed peaceably alongside each other on bits of honey left on the walls of an extractor tank.

No. 5. Mound enlarged one and a half times to show its irregular texture due to the numerous daubs of mud which the yellow jackets splotched over preceding daubs.

When the nest was taken from the ground on January 2, 1956, the colony consisted of three queens, five drones, and 15 workers with no morale for defending the nest. In October at mid-afternoon yellow jackets were entering the nest at the rate of 45 per minute and the morale was high.

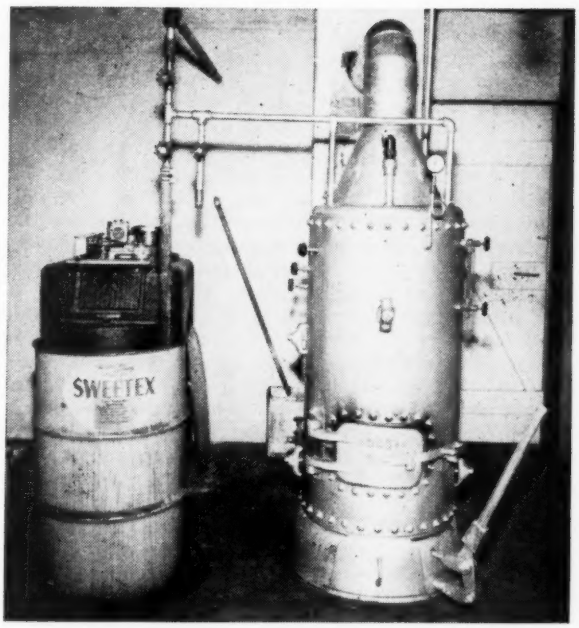
No. 6. The drone, the queen, and the worker of vespula pennsylvanica (Sauss.).

Bee Lines to the Editor

A FEW YEARS AGO Gleanings started a department with the above name but somehow it fizzled out. We would like to get it started again and keep it going. This will be one place in the journal where our readers can have their say, air their "gripes"—if they have any, or, they can comment favorably on articles. We like to know if we are coming anywhere near hitting the mark in what we are aiming to do. It isn't necessary for your name to appear under your comments. Your initials will suffice. So come along with your "Bee Lines". Don't be backward.

A Steam Boiler for the beekeeper

by VERNON REUTER, Milford, Indiana



The steam boiler described in the accompanying article.

THE USEFULNESS of a steam boiler for a medium-size apiary cannot be over-estimated. Second-hand boilers are often obtainable at no great outlay of cash. Steam can be supplied for making hot water to melt wax cappings, boiling old combs, or heating honey to prevent granulation.

If you can locate a good fin radiator at a junk yard or elsewhere and put a fan behind it, you will have a set-up that will keep a small workshop warm in the wintertime.

The bottom of the heater should be placed above the water level of the boiler so that the condensed steam in the form of water can run back to the boiler. An essential item needed for use with a heater is a Hoffman No. 74 Heater Vent Valve.

Without the Hoffman valve air becomes trapped in the steam pipe, which prevents the heater from getting hot. This valve should be installed in the pipe returning the condensate to the boiler by the use of a T pipe. At the time the accompanying picture was taken the Hoffman air vent valve was not yet installed.

It is desirable to use gate valves on both the pipe going to the heater and on the pipe returning to the boiler. If the heater develops a small leak, both gate valves are necessary to isolate the heater from the boiler.

The boiler illustrated was located in South Bend, Ind. As the boiler had new tubes or flues, I decided to purchase other parts for it and fix it up.

A boiler like the one illustrated is

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24 inches in diameter and will weigh about 1,000 pounds. To set the boiler up on the base it was necessary for me to purchase a chain hoist. I have a slightly used one-ton hoist made by Maxwell, Manning, and Moore of Muskegon, Michigan. The new price on these hoists is a little over $100.00, and they are worth it.

A necessary piece of shop equipment is a ½ h.p. motor with a five or six foot flexible cable. The motor can be mounted on a little stand or box and a wire brush placed on the flexible cable. This flexible cable is also used for a grindstone.

The wire brush is used to remove all rust and scale from the boiler. The boiler was then painted with aluminum paint, which will stand a considerable amount of heat.

The base with shaking grates was made by the Hamburg Boiler Works, Hamburg, Pa. A base from the Orr and Sembower boiler illustrated is no longer available from this company. The tips of the rivets inside the boiler had to be trimmed off a little with a flexible cable grindstone so that the boiler could set down on the base properly.

The handholes were cut out a little with a small grindstone on a flexible cable to fit the new style O & S handhole covers. The Orr & Sembower boiler illustrated is no longer manufactured by the company, but certain repair parts are available.

Before ordering repair parts from any company it is always well to inquire first about the cost of such parts. Sometimes this cost may be much more than the beekeeper wishes to pay.

The cone hood was made by the Erie City Iron Works, Erie, Pa. This company can design and build any size of cone hood to your specifications at a reasonable cost. I am using an eight inch pipe on my boiler.

The water gauge, steam gauge, and pop-off valve were obtained from the South Bend Supply Co., South Bend, Indiana. In cutting glass for the water gauge a special tool is used to mark around inside the glass before breaking it. The steam gauge registers 0 to 30 pounds. The pop-off valve operates at 15 pounds of steam pressure.

The steam hose is of 1" inside diameter to go over the ¾" steam pipe. The other valve beside the steam hose valve is to release excess steam outdoors through a garden hose. This was later changed by running a pipe outside the building.

The steam gauge should be connected so that live steam cannot enter the gauge and cause damage. This is accomplished by the use of a pigtail or coil pipe siphon, as shown in the picture. A water leg forms in this coil to prevent steam from entering the gauge.

To attach the steam pipe to the boiler it was necessary to borrow a large tap from a local store. The tap was run down into the hole to remove rust from the threads.

All boilers use fusible plugs. If the water gets too low the tin center in the brass plug will melt and let water run into the firebox to put the fire out. These plugs are made of pure banca tin which melts at 443 degrees F.

There are two kinds of fusible plugs: the inside type and the outside type. The inside type screws into one of the tubes located behind the front handhole cover. The outside type is for a boiler without flues and goes at the top of the firebox.

The operation of these boilers requires a considerable amount of attention from the operator. Coal has about twice the heating value of wood for the same weight. (See "Steam Plant Operation," 2nd edition, Woodruff & Lammers. McGraw-Hill Book Co., 1950). Care should be taken that enough water is kept in the boiler at all times. This is indicated by the water glass. If the water gets too low, these boilers are liable to a **disastrous explosion.**

Turbulators are twisted strips of metal that can be placed inside the tubes or flues and hung from the top by a nail. These can be twisted only on a special machine. They help utilize hot flue gasses to make steam.

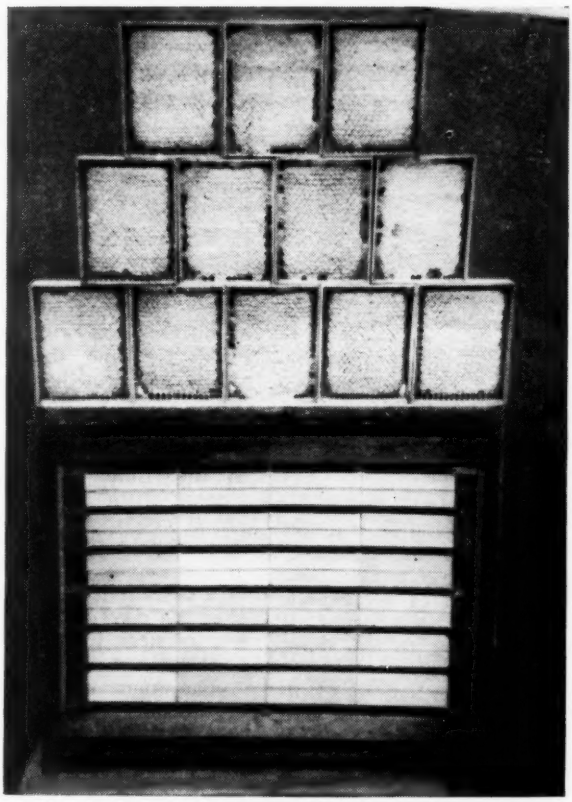
The author tried burning up a lot of plastic boxes in the boiler. The boxes made a lot of black smoke and plenty of steam for awhile. Soon I noticed smoke coming out of the front door and the steam pressure would not build up anymore. On removing the cone hood I found that the turbulators were clogged up with a generous amount of black soot.

"Wax should never be overheated:

(Continued on page 381)

Section Comb Honey Production

as experienced by M. J. DEYELL



Populous colonies, skillful hive management, and a heavy honey flow are required to produce comb honey.

I WOULD LIKE to have it understood at the outset that I do not pose as an expert in section comb honey production. However, during the years, I have had a few experiences in comb honey production that I would like to share with Gleanings readers.

Those of you who have produced section comb honey know that there is something really intriguing about this work. Removing a well filled and capped super of section comb honey from a colony is a thrilling experience. What is so beautiful and appetizing as a section of comb honey? It is one of the articles of food that cannot be duplicated.

My First Experience

After working in the Root Company apiaries for one season, I decided to launch out into beekeeping on my own, so bought a hive of bees. The hive was moved on a wheelbarrow from one side

of town to the other where I lived. Apparently, the bumpy ride did not improve the temperament of the bees. Even though the hive was placed on the far corner of our lot, the bees made life interesting for those who attempted to go near them. An elderly lady used to sit on her front porch and I was afraid the bees would sting her so I moved the hive beside the hives in a neighbor's apiary. A little later I took the hive out into the country and placed it at the side of a large field. Strange as it may seem, the bees appeared to have had a change of heart and permitted me to manipulate the combs without being stung. I have wondered since if perhaps environment may affect the temperament of bees.

I put on a comb honey super which the bees practically filled during the season. I now know that if I had built the colony up to good strength, I could have gotten more comb honey. The colony did not attempt to swarm. It may have had a young queen although, at that time, I was so inexperienced I did not know much about the age of queens.

My Michigan Experience

It was the spring of 1917 that I decided to go into beekeeping on a larger scale so bought 210 colonies in northern Michigan, Manistee County, near Copemish. The account of my experiences appears in the 1954 issues of Gleanings but I do want to tell about producing section comb honey.

I bought the bees from Samuel Coulthard of Humphreys, Michigan, who was said to be one of the best comb honey producers in Michigan. He surely knew a lot of tricks of the trade but didn't divulge his secrets unless you became rather well acquainted with him.

After moving the bees (eight miles by R. R. stock car and six miles by horses and wagons with hay racks) to a new location, south of Copemish, my wife and I were kept busy nailing up hive bodies and frames, since we decided to produce extracted honey. However, we did reserve about a dozen colonies for producing section comb honey which we planned to sell locally.

Swarms Aplenty

Some of the strongest colonies cast swarms quite early during the honey flow. The man from whom I bought the bees practiced clipping the wings of the queens. I decided to do this and it was well I did because this prevented some swarms from going to the woods.

A Trick of the Trade

Mr. Coulthard put me on to a little trick which worked well. In anticipation of swarms issuing from the hives, I carried in my hip pocket some wire cages for caging the queens. When I saw a swarm issuing, I would watch for the clipped queen at the hive entrance, put her into the cage, then place the caged queen into the hive entrance. I would mark this hive by putting a stone or brick on top, then continue with my apiary work and return later. In due time the swarm would return to the hive. One forenoon, six swarms came out in less than an hour. I would examine the brood chamber of each colony that had swarmed and destroy all but one good ripe queen cell in each hive. I would then take the caged queen and put her in the top comb honey super, at the side, next to the follower board. Naturally, the bees would feed this queen through the wire screen. In due time, a virgin queen would emerge from the one cell left in the brood chamber, then later on, would mate and become a laying queen.

This caging of the old queen resulted in a cessation of egg laying for a little over ten days which is said by the old bee masters to be essential in swarm control.

The main advantage in caging the old queen is that the bees in the colony are not divided as they are in natural swarming but are kept together, which should result in a larger crop of honey.

I found that the caged queens would live in their cages for a couple of months. If they had not outlived their usefulness, they were used in the yard. If they were too old to be of any value, they were killed.

When mentioning this little trick in hive manipulation to some experienced beekeepers, they seemed somewhat skeptical about it. They seemed to think that the colony, if bent on swarming, would start more queen cells from young larvae and a swarm would issue with a virgin queen. This never happened with me. At least, I had a chance to give it a good try-out in that rasp-

berry region where the honey comes in rapidly, especially at the beginning of the flow. This raspberry flow lasts about five weeks and after the bees settle down to work, there is comparatively little swarming.

Raspberry Section Comb Honey —None Better

One evening early in July we were pleasantly surprised by a visit from the late E. R. Root, his wife, and son Alan. Since we invited them to stay for lunch, the thought occurred to me that it would be a good idea to get a couple of combs of honey so that our guests would actually know what fresh raspberry comb honey, just off the hive tasted like. Fortunately, I found a super that had some completely filled and capped sections. If there is any honey better than raspberry comb, I would like to taste it. The honey was greatly enjoyed by all. I asked E. R. how much he thought I should charge for the honey, since I intended to sell some locally. He thought 50c a section would be about right. I had planned to sell it for considerably less.

Since that time I have produced some very fine section clover honey but in my opinion, it did not compare with the raspberry honey. I can still taste it.

Experience in Western Ohio

The season of 1938 was one of the best honey seasons we have ever had in Ohio. At that time, the Root Company had between 300 and 400 colonies in western Ohio operated for the production of extracted honey, also about 600 in eastern Ohio. I wanted to get some experience in producing section comb honey, so we set aside 85 hives for this purpose. Some of these colonies were developed from packages of bees installed the latter part of April. Others were over-wintered colonies in food chamber or double brood chamber hives.

Three Experiments Conducted

These experiments were conducted to try to find answers to three questions, namely:

(1) Will comb honey colonies developed from package bees swarm the same season?

A double brood chamber colony boiling over with bees, ready for supers.

(2) Will top supering work in comb honey production?

(3) Is it possible to produce comb honey over double brood chamber colonies?

We were open-minded on these matters and were willing to let the bees give us the answers.

Package Colonies Did Swarm

The colonies developed from packages were operated in single story brood chambers. The main honey flow started a little earlier than usual that season and some of those colonies were not quite up to par in strength at the beginning of the main flow. The overwintered colonies in double brood chambers reached the peak of their strength at the proper time, at the beginning of the main flow.

Swarming appeared to be worse than usual, especially at the beginning of the honey flow. We inspected brood chambers regularly each week. After putting on the first supers and making an inspection of brood chambers, we found about 25 per cent of the single brood chamber colonies preparing to warm. Some colonies had advanced larvae in queen cells and others had eggs in queen cell cups. Comparatively few colonies occupying double brood chamber hives made preparations for swarming.

(Continued on page 370)

Editorials

The More Rain, the More Grass

IF THIS IS TRUE, and we assume it is, generally speaking, the areas or sections of the country that have received copious rains should produce grasses which it is hoped may include some of the clovers that are beneficial to bees. Unfortunately some states, as for example, Texas and Oklahoma have had too much rain in certain areas. Such rains are likely to cause a considerable amount of erosion. One would wish that some of these torrential rains could be diverted into dry areas that need them badly.

The May 1957 issue of the "Farmers' Digest" contains a thought provoking article entitled: "Will our grasses be destroyed?" The writer of this article goes on to say that in the opinion of Dr. J. E. Weaver of the University of Nebraska, a world famous plant ecologist, much of the grass land of the Great Plains is in danger of extinction unless man is willing to accept some of the rules nature has laid down through countless centuries of trial and error. The farmer's plow has destroyed much of the grass land in Nebraska as well as some other Great Plains states also the Western Canadian provinces. Dry weather and dust storms have removed much of the top soil. Naturally these occurrences have been detrimental to beekeeping.

It is hoped for the good of agriculture and beekeeping that the drastic measures now being taken to prevent further destruction of the grass lands may result in at least a measure of success.

Sugar Production Increasing in Cuba

LAST YEAR the Cuban government held the output of sugar to 4.6 million tons and then set a limit of 5,150,000 long tons on 1957 production. Soon it became clear that the world demand had been underestimated so Cuban restrictions were lifted. Recently a private estimate put the current crop at 5,366,564 long tons. Prices are advancing due to foreign purchases. It is reported that Soviet Russia purchased 150 tons and is dickering for more. Germany, France, Japan, Iran, and others are looking for sugar.

While sugar and honey are not exactly competitive yet an increased world demand for sugar is sure to have an effect on the demand for all sweets, including honey.

The Mystery of Honey Flows

IN THE APRIL 1957 BEE WORLD, reference is made to an article, "The Puzzle of Honey Flows", which appeared in an Australian newspaper, "THE AGE", February 1957. The writer says that commercial beekeepers in Australia have noticed that when an exceptionally heavy honey yield has been obtained from the eucalyptus in one area, such a flow is not obtained again in that same area for some years. One explanation is that a heavy seed production which follows extensive pollination puts an unusual strain on the trees, from which they do not recover for a number of years.

Similar conditions have been experienced with clover, both in Australia and the U.S.A. It is suggested that conditions in nectar, following a good honey year, may be due to the loss of some substance in the soil which cannot be replaced for a number of years.

We have noticed here in Ohio that an unusually heavy honey flow from clover is seldom, if ever, followed by another such flow the following year. We do

recall that in the vicinity of Medina, where alsike and white Dutch clovers were more plentiful than now, we did have a bumper crop in 1920 and a similar one in 1921. That was very unusual. Those two good years may have been due to favorable soil and weather conditions, also an abundance of honey plants.

Generally speaking, a good honey flow requires ample moisture during the time the honey plants are developing, then drier weather and suitable conditions for nectar secretion during the time the honey flow is on.

Some years ago, 1932, to be exact, we experienced an unusually heavy flow from alfalfa in western Ohio during a very dry spell. As a matter of fact, practically all other vegetation was dried up, while alfalfa was the only green thing on the farms. But in spite of dry weather, honey poured in. We secured an average of 230 pounds per colony from 75 hives in one yard. And so, there is still considerable mystery surrounding nectar secretion and honey flows.

Swarming and Swarm Control

THOSE WHO HAVE NOT read the chapter entitled "The Swarm" in "The Life of the Bee" by Maeterlinck, have missed something, especially from the standpoint of enjoying some of the best in literature.

During the years there has been considerable mystery concerning the swarming of bees. Maeterlinck says; "All things go to prove that it is not the queen, but the spirit of the hive that decides on the swarm. What is this spirit of the hive—where does it reside? It is not like the special instinct that teaches a bird to construct its well-planned nest and then seek other skies when the day for migration returns".

Allan Latham, for many years a contributor to Gleanings, mentions the controlled bees which must be bees of a certain age that order the activities of a colony of bees which would include swarming.

It was the pleasure and privilege of the writer to have been associated with the late George S. Demuth, former editor of GLEANINGS for 13 years. Prior to his coming to Medina in 1920, he had for eight years been apiculturist assistant to the late Dr. E. F. Phillips of the Bureau of Entomology, Washington, D. C. While Mr. Demuth was in Washington, also while he was editor of GLEANINGS, he maintained a sizable apiary of around 200 hives near Peru, Indiana, his former home where he had kept bees since he was 11 years old. Mr. Demuth is recognized as having been one of the leading authorities of section comb honey production, swarm control, and bee behavior.

In 1921, Mr. Demuth brought out the Farmers' Bulletin, No. 1198, "Swarm Control", a classic on this subject. In this bulletin, he emphasizes the importance of avoiding congestion within the brood chambers of hives as a swarm control measure. It stands to reason that a populous colony that does not have sufficient comb space for the storage of incoming nectar and pollen, also for brood rearing, is compelled to swarm. One good way to prevent this swarming is to put on supers before congestion begins to occur.

In referring to the influence of young queens in swarm control, Mr. Demuth has this to say: "If a young queen is introduced into a colony previous to the swarming season, after a period of queenlessness, so that there is a period of ten days during which no eggs are laid, there is usually no attempt to swarm during the same season, especially if the interval of no egg laying occurs late enough so that the young queen is not able to reach her maximum of egg laying before the close of the honey flow. If, however, the old queen is removed from the colony previous to the swarming season and the young laying queen is introduced at once, without an interval of no egg laying, the tendency to swarm may be reduced little, if any. The condition of the colony brought about by a period of queenlessness is apparently a greater factor in reducing the tendency to swarm than the age of the queen. Colonies which have both a young queen and the interval of queenlesness, usually may be considered safe from swarming again the same season, especially in the North."

Beekeepers who live in areas where swarming is a problem, or those who produce section honey should be interested in the foregoing.

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NEWS REEL

L. P. BAKER, a director of the Cook-DuPage Beekeepers' Association, Inc. of Glencoe, Illinois, demonstrates to Alan Root on the left and Roy Grout, Hamilton, Illinois, on the right his 60-pound can handle. Mr. Baker points out that the weakest spot generally on a 60-pound honey can is the wire handle. Not only is it hard on the hands but it has a tendency to come loose. Mr. Baker's handle grips the corners of the can through a lever action when the handle is raised. The demonstration was made at the Cook-DuPage February meeting.—Photo by J. S. Sedlak, Vice President of the Cook-DuPage Association.

A VIRGIN QUEEN BEE, put to sleep by carbon dioxide gas, is held in proper position in the tip of a glass tube under magnification by a microscope. After adjustment of the organs at the tip of the abdomen by means of mechanical devices, the unmated queen is artificially inseminated with sperm from one of her own sons. Called "Selfing" by plant breeders, this procedure makes possible controlled hybrid strains of animals by this method for the first time. —Photo by Forsythe, USDA photo.

WESCOBEE HONEY EXHIBITION. The Australians know how to make an attractive honey display. This picture was sent in by Tom Powell, manager of the Honey Pool of Perth, Western Australia.

PREPARING PACKAGES OF BEES FOR NORTHERN SHIPMENT. Apiculturists at the Bee Culture Station of the Bureau of Entomology and Plant Quarantine, U. S. Southern States Bee Culture Station of the U. S. Dept. of Agriculture at Baton Rouge, La., ship packages of bees north each spring for research at the Department's other stations, thus making it possible to start new colonies in the North earlier than would be possible otherwise.

Dr. Warren Whitcomb, Jr., in charge of the station, hangs a small cage holding the queen and half a dozen workers inside the shipping cage in which more worker bees are clustered around a tin container in the center of the cage which contains sugar sirup to feed the bees during their trip. — Photo by Forsythe, USDA Photo.

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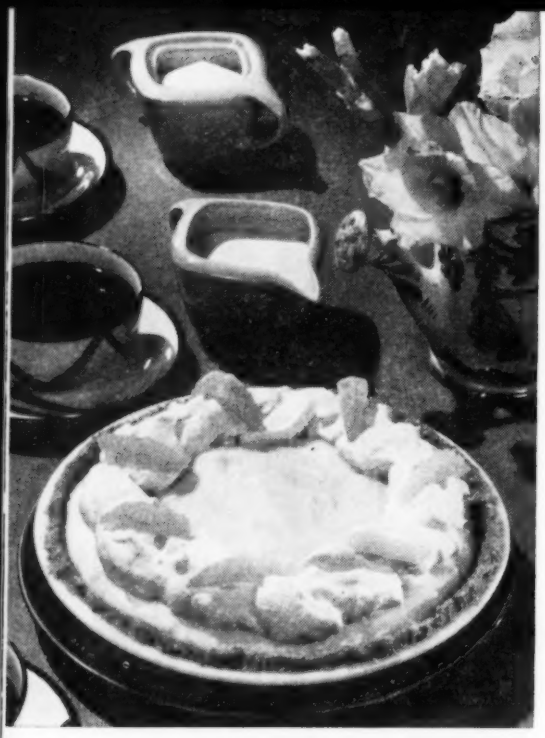

Delicious Desserts

by MRS. BENJ. NIELSEN

Aurora, Nebraska

Orange chiffon cream pie with honey crumb crust.—Photo courtesy Kellogg Company.

IF YOUR FAMILY has a sweet tooth, there is no better way to satisfy it than by making delicious desserts—the honey way, of course. Generally speaking light or mildly flavored honeys are better in this branch of cooking. Unlike sugar and some syrups, honey flavors as it sweetens. A mild honey will produce a subtle, intriguing flavor. Use of strongly flavored honey results in a masking, cloying flavor.

Should you wish to convert some of your present favorite desserts, a la honey, it is easy to do and a lot of fun! Just keep in mind that honey is about 20 to 25 per cent sweeter than ordinary sweetening agents. It may be necessary to reduce the liquid in your recipe by about one-fourth. When dried fruits or chocolate are among the ingredients, this is not necessary. Always cook with moderate temperatures to avoid scorching the honey.

Do try these and perhaps they will inspire you to work out some of your own. Happy experimenting!

Orange Chiffon Cream Pie

Four cups corn flakes, 2 tablespoons honey, ¼ cup melted butter, ½ pound marshmallows, ¼ cup orange juice, 1 tablespoon lemon juice, 1 cup whipping cream, and 2 teaspoons grated orange rind.

Crush flakes into fine crumbs. Blend butter and honey. Stir in crushed flakes; mix well. Press evenly and firmly around side and bottom of 9-inch pie pan. Chill. Cook marshmallows with orange and lemon juice over boiling water, stirring frequently until combined. Cool. Whip cream until stiff; fold in orange rind. Fold into cooled marshmallow mixture. Pour into flake pie shell; chill until firm. Garnish with orange sections, shaved chocolate, or additional honey sweetened whipped cream, if desired.

Honey Ice Cream

Two eggs, ⅓ to ½ cup honey, 1 cup top milk, 1 cup light cream, and 1 teaspoon vanilla.

Beat egg yolks until thick and lemon-colored; beat honey in gradually. Add milk, cream, and flavoring. Pour into refrigerator dessert tray. Freeze until firm with control dial set at "Coldest". Remove to chilled bowl, add unbeaten egg whites and beat until fluffy. Return to freeze compartment 'til frozen.

Honey Lime Topping

One-third cup lime juice, ¼ cup water, 3 teaspoons cornstarch, 3 drops green coloring, and ⅓ cup honey.

Combine juice, water, and cornstarch, blending until smooth. Bring to

(Continued on page 380)

Bees in a Hollow Tree

by MARVIN W. KOSANKI, Ripon, Wisc.

EARLY IN MAY of last year I had the unique and interesting experience of transferring a colony of bees from a hollow tree to a hive. It was the first experience of its kind that I have had since I've been keeping bees.

In one of my yards the owner had decided to fell some oak and hickory trees for fuel. It so happened that one large oak tree had a cavity that contained a colony of bees. The weather was quite cold at the time he cut down the tree so he was able to secure a fairly large amount of honey without any resistance from the bees.

It was in April sometime after this that I chanced to see him on one of my trips to the yard. He mentioned the incident of finding a colony of bees in a hollow tree when cutting wood during the winter. Naturally I was very interested when he told me about it so I asked where the tree was located. The owner told me it was not far from my yard but he believed the colony to be dead.

When I had finished my work in the yard I started out through the woods to find the tree. I had some difficulty in finding the tree as there had been a great many cut down. They had not been trimmed but just had the trunks cut in four-foot lengths.

After some time and with a little difficulty walking among the felled trees I noticed a few bees flying about. I stopped and looked around when I suddenly noticed about a rod away more bees were flying in and out from a hollow log. Nearby were two more hollow logs that contained some old comb but no bees.

I walked back to my yard where I had some extra equipment stored and returned with a hive body, inner cover, excluder, cover, and smoker. With some difficulty I managed to set up the log with the bees in an upright position. On top of the hollow log I placed the inner cover first. On top of the inner cover I set the hive body with the cover on it. Then I proceeded to vigorously smoke the hollow log through an opening on the side of the trunk that the bees had been using for an entrance. The smoking was accompanied by drumming the log with a fair sized stick.

When all of the bees had left the log and were in the hive body I inserted a queen excluder between the inner cover and the hive body to prevent the queen from going down again in the log. The entrance on the side of the log was closed and another was given to the bees in the hive body. The hive body was left on the log until all the brood had emerged from all the old combs that were in the cavity. At that time the colony was removed to my home yard.

After the bees were taken away I removed all of the combs from the three logs with a long machete-like knife. The amount of wax that I secured from these combs alone paid me for my time and effort spent in hiving the bees in addition to securing the bees and having a very interesting and pleasant experience.

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FROM Foreign LANDS

Translated and Edited by ERIKA BARTH

Dealing with Ants:

HERE ARE some suggestions for controlling ants:

1. Spray or paint the runways (situations where the ants are most commonly seen) and locations where they gain access to the home and nests, with two per cent chlordane. It may be necessary to spray skirting boards and outside of cupboards also. This insecticide may be applied with a brush indoors. Once it has dried it remains effective for some months.

2. Spraying with four and five per cent DDT household spray will also give relief when applied to these situations.

3. Nests may be treated with five per cent dust or 10 per cent BHC dust. Inside the house, legs of refrigerators or safes or beehives may be set in shallow tins containing some of the dust to act as a barrier.

4. The following baits have also been effective. These could be used to destroy a nest.

Arsenite of soda (80% arsenious oxide) 1 part; Honey, 320 parts; Water, 20 parts.

The Australasian Beekeeper

Bee Involved in Road Accident:

A BEE which flew into the cab of a motor truck and fell near the 10-month-old baby of the driver was alleged to have caused an accident which had its sequel in a claim for damages heard in the Supreme Court in Nelson before Mr. Justice Turner and a jury of 12.

It was claimed that the plaintiff was standing in front of his car, which was parked on the side of the road, when the defendant, driving a light truck, came in collision with the plaintiff's car. It was alleged that the accident was due to the negligence and unskilful driving of the defendant. The defendant admitted that the truck came into collision with the plaintiff's car, but denied the allegations of negligence.

The defendant claimed that as she was driving past the car a bee suddenly approached near her and her baby in the back of the truck and that, through fear of the baby being stung by the bee, her attention was involuntarily and momentarily diverted from her driving.

As a consequence the truck veered slightly to the left and collided with the protruding end of the front bumper of the plaintiff's car, forcing the bumper onto the plaintiff.

Judgment was given for defendant and following unanimous affirmative answers by the jury to the following questions submitted to it by the judge:

1. Did the bee make its appearance in the truck immediately before the accident?

2. If so, did this happening reasonably excuse the defendant in respect of such acts or omissions on her part as caused by the accident?

The judge entered judgment for the defendant, with costs, the order to take effect if no move is made for a new trial.

The New Zealand Beekeeper.

How Old is the Custom of Clipping the Queen's Wings?

THE ABOVE question was asked in this column in the April issue of Gleanings and brought the following notes from Fred W. Schwoebel of Philadelphia, Pennsylvania:

"The following quotations are from

(Continued on page 378)

Live and Learn

by Propolis Pete

YOU PROBABLY won't be able to sleep nights until you hear the final report on how my bees wintered. So, to end the agony, here is the final for this season. One of the troubles with any experiments of this kind is that if they are successful we are inclined to go for the whole hog. Well, my experiments were a success so far, but I am not going to broadcast until a couple more years prove or disprove them.

I didn't have to feed a single colony this year, up to the time that brood rearing started in earnest, which is about the middle of April in this location. Then, only three out of 22 were low enough in stores to make me think that a little boost would help some of them to keep up the good work if we should strike a spell during which they couldn't get out.

That mysterious heavy flow after the season was over last fall helped a lot. I don't claim any credit for that. For the fact that every colony was in good shape this spring, I give credit to the good stock, to the plentiful stores, and to the fact that the bees were given enough protection to get them through the worst part of the winter without straining too hard to keep warm.

If everybody else here had the same experience, regardless of how they made their preparations for the winter, I would say that what I did had no effect at all on the wintering. But such is not the case. I have had five or six cases called to my attention, where the bees either died out during the winter with honey in the hive, or came through in such weak condition that they cannot hope to produce a crop of honey this year. I looked at a colony belonging to a neighbor today that was reduced to a couple of hundred bees. Last fall and all through the winter, this chap kept telling me about how well they were coming through, how much honey he had left with them, and how busy they were on the occasional mild days when they flew. When he called a couple of days ago, he said that they were queenless, because there was no brood. When I looked, I found eggs and a few just hatched larvae. The queen was very small, and apparently had just started to lay. The fact that she was small did not necessarily mean that she was no good. Even good queens are small when they are not laying. His trouble was that there were not enough bees to incubate the brood and nurse it.

The colony was wintered with no protection whatever in the space between my friend's and a neighbor's garage. He lives in a residential section and is afraid that if he brings them out into the open, he will have neighbor trouble. I have told him that it is a bad place for them, and if he insists on keeping them there, to pack them for the winter. The blast of air through that gap between the two buildings is enough to blow off your toupee.

In every one of the cases that have been brought to my attention, none were given any protection. This would seem to indicate that while a lot of colonies can live through, some form of packing is advisable for around here. My colonies are exposed to the weather, too, and I am inclined to give a lot of credit to that tar-paper wrap. Next fall I am going to describe it again, and maybe send along a picture so you can see how simple it is.

Another experiment last year was the three-quarter-depth hive. I wintered one colony in three of these "deep shallows", making it the equivalent of a regular two story colony. All winter they appeared strong from the outside, and a peek showed that they had plenty of stores. When the time came for the regular spring going-over I was really astonished at the quiet strength of that colony. Believe it or not, the top body was so solid with honey that there were no bees up there. I got a little scared when I opened the hive and found no bees, but when I took off the top body I found plenty. The middle body was half full of honey, and the other half with sealed brood. The queen was in the lower body laying like mad. There was brood in 12 of the frames. I would guess that it was the equivalent of nine regular frames full.

Whether these two instances were the result of luck or genius I don't know, but both experiments turned out so well that I am going to repeat and see if it happens again next year. Maybe I have stumbled onto something worth while.

XUM

Asked & Answered

Origin of Brood Diseases

Question: An old bee-man here says that whenever we open hives at a time that would chill the brood, this results in foulbrood. Is he correct in this?

Answer: No. Neither American foulbrood nor European foulbrood couid possibly be caused by chilled brood. The cause of each of the brood diseases has been definitely established. American foulbrood is caused by a micro-organism known as **Bacillus larvae,** and European foulbrood is caused by another micro-organism known as **Bacillus pluton.** There can be no American foulbrood unless some of the organisms causing it are carried into the hive from a diseased colony. The same is true of European foulbrood. A simple experiment will show that chilled brood does not cause the brood diseases. By placing a comb of chilled brood in a healthy colony the bees will clean out the dead material and no harm done; but if a comb of American foulbrood is placed in the hive, the disease spreads until the colony is destroyed unless the beekeeper intervenes to save it.

Uniting Hives of Bees

Question: How can I unite two colonies of bees?

Answer: Uniting two colonies can be done by the newspaper method, placing one sheet of newspaper between the two hives of bees to be united, punching one or two small holes through the paper, with a pencil, in order to admit a little ventilation to the bees above. If you have any preference as to which is the better queen, the hive containing this queen should be put above the paper.

Deep vs. Shallow Food Chamber.

Question: I am an amateur beekeeper with four hives. I am wintering the bees in a deep super brood chamber and a shallow super food chamber. I intend to use instead of the shallow super a deep super as a food chamber. I have in all my shallow supers a one-inch hole. I intend to put one in the top deep super too. Where should I put it? This spring I am starting a new colony. Somebody told me to use in the brood chamber nine frames only. This way it would be easier to check the brood chamber without injuring the queen. Would you recommend it? Another question. Would you recommend to change the two deep supers once a year or every other year? I mean, to put the food chamber on the bottom and the brood chamber on top?

Answer: It would be all right to eventually have a deep super on each hive to be used as a food chamber. We rather prefer the deep food chambers as they contain more honey. The colonies are not so likely to run short on stores during the spring months when deep food chambers are used. However, it is possible in some areas where there is a heavy fall flow, to winter bees in shallow food chamber hives. When this is done, it is an advantage to use a queen excluder over the bottom brood chamber during the late summer and fall months so that the bees will put a considerable amount of honey in the lower chamber and fill the shallow food chamber completely.

Regarding the hole in the front of the hive as an outlet or flight hole during winter months, we bore a ¾ inch hole directly under the hand hold which is about the middle of the hive. This seems to serve the purpose quite well. Bees can always get out through this upper entrance if they need a flight. Some bees that are badly in need of a winter flight can get out through this upper entrance to take a short flight and then can get back into the hive quite easily.

Regarding the advisability of reversing the position of the brood chambers, this is sometimes done as a swarm control measure during the early part of the season when colonies are likely to build queen cells. We have done this occasionally and it works out quite well.

In our opinion it is preferable to keep ten frames in the bottom brood chamber, instead of nine. When you use nine frames, the bees are likely to build burr or brace comb between the top bars of the frames and this comb is a nuisance when you return the combs to the hive after examining them.

It does seem feasible, however, to use nine combs in each honey super instead of ten, so that the bees may fill the combs out farther. This makes uncapping the combs easier than when ten combs are used in each extracting super.

American Honey Institute News Notes

by HARRIETT M. GRACE, Director of American Honey Institute

IT HURTS—yes, it hurts— to shell out money and plenty of it to pay an advertising bill. It's not quite like going to the appliance store and buying a new washing machine. There you pay a lot of money but you've got concrete evidence of what you paid for, right down in your own basement. With advertising it is different; you pay again, but just where is the merchandise?

You hope it pops up in the form of increased honey sales. And what you want to know more than anything else is—does your advertising pay?

It is a well proven fact that correct advertising pays richly. If you follow the rules, you win the game. But if you shrug them off, you either are disqualified or else you fall way behind.

When you are playing the expensive game of advertising you want to be sure to win. Here are a few check points:

Do you have something worthwhile to advertise? "Why, of course," you answer quickly, "I have honey." But that in itself is not enough; this is what else you need:

1. The honey must be correctly priced. Why try to convince a homemaker to buy your honey if you charge too much for it? She knows what the going price of honey is these days. She is smart and clever when it comes to her marketing chore, and to try to "put one over" on her is only to talk yourself out of a sale. Pricing it too low has an ill effect also.

2. The honey must be good honey. You can lead a horse to water but you can't make him drink. Your advertisement can lead a homemaker to your honey, but it can't make her buy if the honey itself isn't up to snuff. The package must be clean, the honey pure, the display attractive.

Does your newspaper advertising carry your name and address in prominent spots in the layout? One of the most common errors in advertising is the tendency to put the name of the store or the retailer in only one place in the ad. It should be right in the lead of the advertisement, and it should appear again at the end of the ad.

Do you inform your reader? Homemakers tend to skip over those advertisements that don't tell them something new. Just an ad stating the name of your honey, its place of sale and price will not attract buyers. Instead, why not include a droplet of information in your ad layout? A short sentence about honey's quick energy properties or a suggestion to try honey butter, or honey whipped cream, or a short idea for a honey beverage, or a reference to honey's history throughout the ages will all make your ad copy readable and therefore worthwhile.

Make use of the headline technique that newspapers themselves employ in telling their news stories. And put something interesting in that headline. Not just "Honey for Sale;" of course you have honey for sale—so do many others. But rather say:

Honey Brightens Your Breakfast Cereal

Try Our Honey Special Today

It is a fact that from 45 to 65 per cent of total newspaper audiences will read your ad, but many of them will read only the top few lines before turning the page. Therefore, make sure your name gets at the top and also make those first few lines of copy exciting enough to lead the reader through the rest of your ad. A good newspaper ad copy writer will be glad to help you with this, but know what you want before you go down to engage the ad.

Buying an ad is not as simple as buying a washing machine. You buy a washing machine and you buy a stipulated set of gadgets and equipment. But when you buy an ad you buy space. Then it is up to you to fill the space.

By following these few rules you can make your advertising pay and pay well. Above all, don't let ignorance of **how** to advertise keep you from advertising. You will learn and learn fast when you insert your first advertisement and realize that you are making an investment in your business.

Arrangement of hives in one group or town.

The entire apiary made up of five groups or towns spaced some distance apart.

Bee Towns

Proper Arrangement and Spacing of Hives Prevents Drifting

by BRUNO RACINE, St. Jacques, Cte., Laprairie, Quebec, Canada

IN MY first three years of beekeeping, all the hives in the bee yard were placed in a straight line, and this was resulting in much drifting especially the last spring using this system. That season was windy, and in a certain time there were more bees in the first row than the three others behind combined. I remember the great amount of work done to equalize the colonies before the crop. The year after, I devised the present system which was so successful that I adopted it permanently.

The colonies are placed in platoon formation in a horse shoe manner—10 hives in each "Bee Town". The overall space of ground occupied by each agglomeration, is 9 feet x 12 feet and between each, a good vacant space of 14 feet, where could be piled empty honey supers or different material needed by the adjacent platoons. Between each row of platoons is a spacious driveway of 12 feet, where a truck or a car could circulate easily all through the entire yard. With these many vacant spaces, one never feels crowded and bees seem less irritated. Each hive entrance points inside the platoon, a spot which is rarely frequented.

The greatest advantage of this system concerns drifting, as it brings it down to a minimum. Bees coming back from the fields aim at a small town instead of a single colony as is the case in a straight line arrangement, and once over the town they localize easily their own home, as most of the hives are facing different directions. Even when a strong wind prevails, the bees aim correctly because of the vast space of 14 feet between each platoon.

In this region we rarely have wind from the east side, and if we have it is a mild one ordinarily. That is why the horse shoe platoons have their openings facing east. The fact that each hive entrance is pointing inside the platoon, is also an added protection against the other opposite winds.

In each agglomeration the hives are set in twin units thus allowing a greater number of colonies to be placed in the same occupied space. Also this arrangement has the advantage during the summer of protecting one side of the neighbor hive from the hot sum-

mer sun, each hive being alternately in the shadow of the next one, according to the time of the day. The same principle applies also for wind protection, as one hive is sheltered by the other one alternately, according to the wind direction.

When the bees are taken out of the cellar in April, I usually set a weak colony beside a strong one with the twin unit arrangement. It is an easy step then to equalize the whole yard.

Twin colonies have the same scent, and there is good proof of this in the summer time, when during very warm days, those bees clustered outside on the side wall of the hives intermingle as if they were belonging to the same nest.

Finally, numbering or giving a name to each platoon is practical, especially if you have a helper assisting you.

City Slicker Learns Bees the Hard Way

by RUDOLPH B. WUNDERLICH, Brenham, Texas

A WEALTHY business man in the city of Houston having grown tired of the city life decided to buy a farm, take life easy and have a few chickens and cattle. So he bought a run-down farm in the Brenham area. His first step was of course to consult the county agent. The county agent advised him to plant Hubam clover and if he wanted lots of seed he would have to have bees. So this Houston man said he had heard of bees but had never seen any, neither had he seen any houses where they live in. So this county agent says, "I'll find you a beekeeper who will bring you the bees and place them next to your clover field".

Early one morning when this new farmer and his wife started to town he spied something down in his pasture he had not seen there before. "Look, wifey, down there at those little houses. The Pigmie's from Africa must have moved in on us. I don't see what right they had to infringe on my property. I am driving down there right now and see what the critters look like." And so he did take a look at them. The bees still being upset from moving the night before, fell upon him with all their fury. When his wife saw what was happening, she locked the auto door on him and he had to fight it out with those bees. Finally a neighbor came along and killed all the bees that were attacking him. The battle being over his wife took him to the doctor for treatment and that was the end of the city farmer's bee career. He moved back to Houston and said, "No more bees and country life for me".

Storing Virgin Queens

as WALTER NAEGLE of Stillwater, Minn., does it

IF YOU SAVE the queen cages which you receive through the mail in early spring, these can be used to cage any virgins which are just emerging, and for which you do not have nucs at the time to mate them in. These can all be stored until needed in the top story of one colony between some frames of brood. This colony is called the "queen reservoir". Have the laying queen below the excluder clipped to prevent her from swarming out. I have held as many as 35 virgins in one colony by placing the cages vertical with the backs of every two cages together.

Virgins should not be held over 10 or 12 days. If the queens are of various ages, mark the date of caging on each cage. To each nuc give a caged virgin from your "queen reservoir" at the same time you remove the newly laying queen therein. Leave this virgin caged about three days and release. She should be laying a few days after releasing, having attained the mating age in storage. No bees or candy are necessary in the cage with the virgin. They are fed through the screen by the bees. **Never** introduce a virgin to a full-sized colony during a honey flow as she **generally always** leads off a swarm on her mating flight leaving only some newly started queen cells.

A Talk to Beekeepers

Based on Experience, Reading, and Associations with Beekeepers

By M. J. DEYELL

Package Bees Arrived During Winter Weather

EARLY THIS last spring I ordered five two-pound packages of bees with queens to arrive early in April. The shipper did his part, since the bees were shipped April 5th. The packages reached my home April 10th, on a cold snowy day while I was eating mid-day lunch. I did about the only thing I could do with them, put them down in the basement beside the furnace where the temperature was around 65 degrees.

My grandson, an eight-year-old, called my attention to some dead bees on the bottoms of the cages. There were very few, however. When I receive packages I usually shake them and listen for the syrup swishing around in the feeder cans. I could hear very little swishing so decided to investigate the food situation. Sure enough, most of the syrup had been consumed during the five-day trip from Alabama.

Now, here is a little trick of the trade that may help beginner beekeepers who may receive packages under similar circumstances. I mixed up some warm sugar syrup, about two parts granulated sugar to one part water, to fill the feeder cans. To get the cans out of the shipping cages I simply removed the wooden strips covering the cans, gave the shipping cages a solid jounce on the cement floor in order to shake all the bees to the bottoms of the cages. This worked like a charm. I quickly removed the feeder cans then placed the covers over the holes quickly to prevent the bees from flying out. Scarcely a bee was lost.

These small feeder cans each had two small holes. With a nail I made six or eight small holes in each lid. The feeder cans were then filled, the lids put on securely, then the cans were returned to the shipping cages.

Cold weather continued, in fact, we had close to zero weather. By April 15th, the weather was mild enough to install the bees in hives. In the meantime the bees rested comfortably in the basement. It was necessary, however, to give the bees more syrup.

I had to put the hives to receive the packages in my back yard since it was impossible to drive into one of my outyards. The hives contained frames with full sheets of foundation so it was necessary to feed the bees warm sugar syrup to induce them to draw the full sheets of foundation. I fed some pollen substitute but the bees did not seem to take it very well.

The ground eventually got dry enough for me to take the hives to one of my outyards. I then gave each hive a comb of sealed brood with young bees emerging. This comb was put in the center of each hive. I believe these packages will build up for the main honey flow but it may be necessary to give each hive another frame of brood to give them a further boost.

A Peculiar Spring

It is safe to say that no two seasons are exactly alike. Those ten days of winter during early April held back brood rearing. We did have a short warm spell during March, which encouraged brood rearing. It would appear that queens in the North start laying at approximately the same time each season, about the last week in January. The interesting thing is that bees in the latitude of Minnesota and Montana are in about the same condition in brood rearing early in the season as bees in Ohio. At least I have reached this conclusion as a result of corresponding with beekeepers. I may be wrong. If I am I wish some of you experts would tell me. Perhaps it is the position or angle of the earth in relation to the sun that starts queens to lay. I have looked into brood chambers in mid-February and found brood in three

combs, very small patches about the shape of one's hand. Some years ago I visited a beekeeper near New Orleans, La. We opened a hive and found brood in three combs on New Year's day.

Early this spring I examined some populous colonies on February 25th, and in one of them I found brood in two combs, with a few cells containing young bees about ready to emerge. I marked this on the record tag. On May 10th, as I checked through the yard, I found that this colony had brood in 14 combs. Please notice I say brood in 14 combs, not 14 combs of brood. There is a difference. Most of the combs in the center of the brood chamber had rather large areas of brood. The colonies had an abundance of honey and some young emerging drones. This means that these colonies will have to be given ample comb space to avoid congestion which is the main cause of swarming. About May 1st I gave each of the colonies a shallow extracting super of drawn combs without a queen excluder so that queens could occupy the combs if necessary. A few days ago I visited this yard which is about two miles from my office. Quite often I visit this yard in the late afternoon to see what the bees are doing. When I drove up to the yard that evening I heard a slight roar of bees working so decided to look into some colonies. I was surprised to find that some of the colonies had the shallow supers practically filled so it was necessary to give another super. It is surprising what populous colonies will do in a relatively short time when weather and nectar conditions are just right. This means that we should keep ahead of the bees in putting on supers a little in advance of the time they are actually needed.

Having Some Supers at Each Apiary

I perhaps have mentioned this before but I would like to emphasize again the feasibility of having at least one super for each colony piled up at the side of the apiary in the fall, mouse proof, ready to put on in the spring when it is impossible to drive into the yard from the road. I have seen the time when I had to carry supers from the road to the apiary in the spring quite a distance. If we beekeepers

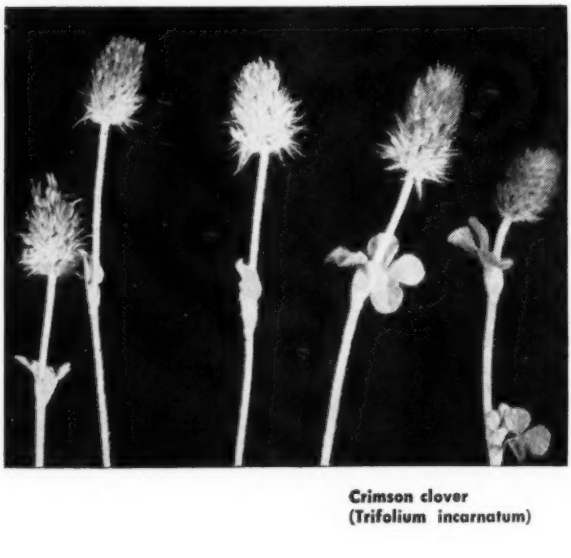
(Continued on page 376)

This looks like a handy way to move a hive. We hadn't thought of it. Had you? The beekeeper is Vic Harris, St. Louis, Mich.—Photo by Burt Martin, East Lansing, Michigan.

There are thousands of back-lot apiaries. This one belongs to Jerry P. Ware, Reidsville, N. C.

Let's Talk about Honey Plants

by HARVEY B. LOVELL, University of Louisville



Crimson clover
(Trifolium incarnatum)

THE AUTHOR made a quick trip to Florida during his Easter vacation. Orange trees had nearly finished blooming and new orange honey was for sale at numerous roadside stands. Many of the palm trees were just coming into bloom with great clusters of yellowish flowers several feet long. The Australian silk-oak was in full bloom, its orange clusters of flowers making a conspicuous show. When I picked a branch I was showered with nectar which accumulates in great quantities in the flowers. This tree seems to have been overlooked by writers as I can find no mention of it in any book on honey plants. C. C. Bradley, Jr. of Davenport, Florida, wrote me some time ago that in 1949 he produced six 55-gallon drums of honey from Australian silk-oak. The honey was reddish-black with a rank flavor and sugared quickly. We found the silk-oak common in the central part of the state.

There is more honey for sale in roadside stands in Florida than in any other state I have visited. In addition to the orange honey mentioned above, tupelo and galiberry honey are featured and sometimes palm honey, the latter usually from saw palmetto.

In central and northern Alabama the roadsides were lined for miles with the beautiful **crimson clover.** The fields were also filled with it in many places, sometimes in pure stands and sometimes mixed with grasses. It must be a leading honey plant in that area.

Tennessee. This state produces 65 per cent of all crimson clover seed in the United States. The seed averages 241 pounds per acre or about four bushels and there were 41,000 acres harvested. Howell, in U.S.D. Leaflet No. 168, states "The florets are self-fertile, but bees are effective in tripping and transferring the pollen, with consequent increase in the number of seeds per head. The placing of colonies of honeybees adjacent to blooming fields will effectively increase pollination." John M. Amos placed honeybees in caged areas and compared the yield to areas outside the cages where both honeybees and wild bees were active. He obtained a 263 per cent increase in the yield of seed (A.B.J., August, 1951). Leslie Little of Shelbyville, Tennessee, describes the honey from crimson clover as light amber with a good flavor and a heavy body. His largest surplus for one hive was 210 pounds with the average sur-

plus being 75 pounds. He adds that the crop never fails in his area. The early blooming about April 15 comes at a time when spring rains are generally abundant.

Mississippi. Crimson clover is an important crop in this state according to Homer Tate of the State University where it produces a mild, light-amber honey. Mr. Merrill of State Line, Miss., reports that this clover blooms as early as April 1 and never fails to produce an average crop of 30 to 50 pounds. He describes the flavor as being only fair with a smell a little too strong.

Texas. Roy S. Weaver writes from Navasota that he rents bees for pollination of crimson clover at $3.00 per hive, not a bad price for pollinating a crop which produces a good surplus of honey.

Oregon. According to H. A. Scullen, crimson clover blooms in May, earlier than any of the other clovers, and gives an occasional crop of honey in the Willamette Valley. The writer would very much like to obtain a small sample of crimson clover honey if anyone reading this column has obtained a fairly pure crop this season.

Wild cherry and black locust are both in bloom in Kentucky as I write this (May 2). Of the many species of trees valuable to beekeeping, the black locust is the first one in this locality which may produce a surplus. If the colonies are strong enough and the weather remains warm and sunny, this locust yields nectar very freely, but a cold rain will stop the flow for the season.

I was much surprised to find chunk honey from southern Georgia packed by a western packer featured in a large chain grocery in Louisville. I tasted it and immediately recognized the typical aromatic flavor of gallberry. The fact that this chunk honey was available in late winter also indicated that the honey must be gallberry because it is one of the few honeys that never crystallize when pure.

CLIPPING, PAINTING, AND CAGING QUEENS

by CHARLES W. LINDSEY, Sebastopol, California

I WON'T venture to say how many queens I have caught in the course of years working bees. The first thing I learned was NEVER pick a queen up by the body. Some people just can't handle queens safely. It is a precision job, and the good queen cager must have a light delicate touch, yet firm enough to hold the queen securely.

Here's how I was taught and have done it for years. First know which hand you want to hold the scissors in, right hand for most people, catch the queen by the wings with that hand, then place her on your opposite thumb; she will take hold with all six feet, then place a finger on each side of the queen, holding three legs with each finger, then release the wings with the right hand and clip off part of a wing on which ever side has been agreed upon. Some breeders clip the left side one year and the right side the next year. Drop the scissors. I have them tied on with a long cord. Paint her while you have her, count 25 slowly, while she dries off and she is ready to cage or put into a hive.

A queen usually won't stick her wings up like workers do, so put your middle finger in front of her, and bring each of your next fingers up, one on each side with a gentle stroke and raise the wings. Better practice on drones first, then you'll soon catch on and be surprised how easy it is to catch, clip, paint, and cage queens in that order.

Our Cover Photo

The three capped swarm cells just below the worker brood are an indication that a swarm may issue any time, so the beekeeper had better do something right away or the swarm may go to the woods.—Visual Aid Office, Penn State University.

XUM

Just News

The **Westchester County Beekeepers' Association** will hold its first outdoor meeting at the home of Mr. and Mrs. Eugene L. Morrison, 204 Woodhampton Drive, White Plains, N. Y., on Sunday, June 16, at 2:30 P.M. At this meeting, we will have inspection of hives and members will have an opportunity to see how the "bees" are working. Please make an effort to attend. Visitors are welcomed. Refreshments will be served.—Mrs. Al. Roth, Pub.

The **Beekeepers' Association of Berk, Dauphin,** and **Lebanon Counties, Pa.,** will meet at the apiary of Paul S. Ziegler, one-half mile east of Bethel, Berks Co., on old Route 22, on Monday, June 10 at 6:00 P.M. Mr. Ziegler will demonstrate the raising of queens. Refreshments will be served.—Darlene Becker, Secretary.

The **Missouri Valley Beekeepers' Association** will hold a picnic meeting on Sunday, June 9, beginning at 1:00 P.M. Mr. G. H. Cale, editor of American Bee Journal will be the featured speaker. There will be games and prizes. Place of meeting will be at Knob Noster State Park, located 20 miles west of Sedalia, Mo. on U. S. Highway 50.—Carl Kalthoff.

Middlesex County Beekeepers' Association (Mass.) will hold its June meeting on June 29 at the home and apiaries of one of their newer members, Dorothea Morgan of Wellesley, Mass. The "Club" hive which was installed at the April meeting by President Neunzer before the members present in the hall of the Massachusetts State Agricultural Experimental Station, will be there. The hive, which showed good progress at the May meeting at member Sam Dixon's place, will be inspected along with other hives belonging to the "Host" member. The bees in this location this year had a real early start due to the early season as the apple blossoms were gone at the end of May and the bees had fine weather to work them. This "Club" hive, as in other years, will be given to one of the lucky members of the association at the final outdoor meeting in September. — Louise C. Proctor, Cor. Sec.

The **Midwestern Beekeepers' Association** will meet at the Apple House of the Unity farm, one-half mile east of 50 Highway and Coburn Road, Lees Summit, Mo., at 2:30 P.M., Sunday, June 9. Mr. Clyde Corn who is in charge of the orchards and apiary at the farm will be host and will furnish a very interesting program. Refreshments will be served after the meeting. Every one welcome.—J. F. Maher, Sec.

The **Worcester County Beekeepers' Association** will hold a meeting on Saturday, June 15th, at the apiary grounds of Warren Newton, 66 Gold St., in Shrewsbury, Mass. A business meeting at 2:00 P.M. will be followed by a basket lunch. The Club Hive will be on display. Philip Pike, president, will preside.—Peter S. Stapor, Publicity.

Dr. Vern G. Milum, Apiculturist at the University of Illinois since 1925, is shifting his duties to full time in Apiculture in the Dept. of Horticulture, College of Agri., Univ. of Illinois from the Dept. of Entomology where formerly his duties were divided between apiculture teaching and research and the teaching of agricultural entomology. He has held the rank of full professor since 1952. He may be reached at a new address—Horticultural Field Laboratory, College of Agriculture, Urbana, Illinois.

William L. Coggshall, Extension Apiarist at Cornell University since 1949, has resigned, effective April 1st. Dr. Coggshall will direct the manufacture of comb foundation and other wax products for Wax Workers, Ithaca, New York. He was engaged in commercial beekeeping, before his appointment to the Staff of Cornell, and helped organize the Finger Lakes Honey Producers Co-op at Groton, N. Y., serving as its president from 1939 to 1945.

The **Connecticut Beekeepers' Association, Inc.,** will hold its summer meeting June 22, beginning 10 A.M. at the Stamford Museum and Nature Center, High Ridge Road, Stamford, Conn. Those coming to the meeting via the Merritt Parkway, turn off at the High Ridge road entrance. The program is under the chairmanship of Mr. Roy Stadel. Mr. Stadel is planning a bee school with the help of other Connecticut beekeepers as instructors. The program will include material suitable to the beginning beekeepers and those who have kept bees for sometime. Lunch will be picnic style, each person to bring their own plates, etc. Coffee will be furnished by the Association. An invitation is extended to any out-of-state visitors to attend this meeting. All who attend will be welcome.—P. J. Hewitt, Jr., Chairman of Publicity.

The **Ohio State Beekeepers' Association** will hold its 1957 summer meeting at the new Youth Building in Columbus, Ohio, Saturday and Sunday, July 27 and 28. The new Youth Building is located on 17th Street between Fourth Ave. and Cleveland Ave., across the street from the Ohio State Fairgrounds. The meeting will open at 10 A. M., Saturday July 27 with a welcoming address by President Harry Vandenberg. On Sunday morning some up-to-date beekeeping films will be shown for those who do not go out to church. The new Youth Building will accommodate some 1100 people and it would be a really wonderful attainment if Ohio beekeepers and their friends from neighboring states could come in and fill it up. Ample parking space will be available at the back and east of the building for the extent of the meeting. Men and women will be quartered separately in a barrack-like arrangement in air-conditioned quarters for $2.25 per person per night. Guests bring towels and wash cloths, with other necessaries furnished. The banquet will be held Saturday evening, July 27, at 6:30 in the dining hall on the premises.

There will be a Honey Queen Contest open to girls 16 to 25 who are relatives of Ohio beekeepers. County Associations and individuals are urged to bring in girls with poise and appearance who can do a good job promoting bees and honey on radio and television. It is desirable to have some idea regarding the number planning to attend and it will help greatly if you notify the secretary, P.O. Box 885, Springfield, Ohio, as soon as you know you can plan to be present. A complete program will be furnished later.—H. R. Swisher, Sec. Ohio State Beekeepers' Association.

The **Norfolk County Beekeepers' Association** will hold its next meeting in the Orchard at the Norfolk County Agricultural School, Walpole, Mass., on Sunday, June 2, at 2 P.M. This will be the first outdoor meeting of the season. The inspection of the Club Hive will be the main attraction.—Edith L. Colpitts, Cor. Sec.

BEEKEEPING SHORT COURSE

Pennsylvania State University August 12-16, 1957

Monday A. M.
10 to 12 Registration
Monday P. M.
1:30 A word of welcome
—Dr. Bertil G. Anderson
1:40 Announcements
—Dr. F. C. Snyder
1:50 Introductions
2:00 Introduction to Beekeeping terms—W. W. Clarke
2:30 Secrets of the Hive
—Edwin J. Anderson
3:15 Making a Start in Beekeeping
—W. W. Clarke
4:00 Inspection of the laboratory and its equipment
Tuesday A. M.
8:30 Colony Activities and Characteristics—Edwin J. Anderson
9:00 Care and Introduction of Package Bees—W. W. Clarke
9:45 Spring Management
—Edwin J. Anderson
10:30 Races of Bees—W. W. Clarke
11:15 Cut Comb Honey Production
—John M. Amos

(Continued on page 372)

COMB HONEY PRODUCTION

(Continued from page 351)

Swarm Control Manipulations

To prevent swarms coming from single story chamber colonies going to the woods, we had to do something rather drastic, since we could not be on hand to attend to swarms, so we decided on the following:

During each weekly inspection of brood chambers, we carefully destroyed all queen-cell cups containing eggs and larvae. To do this, it was necessary to shake most of the bees off each comb so that we could find all the queen cells also eggs in the cups. This work naturally took time. In a small percentage of colonies, the removal of queen cells and of eggs in queen-cell cups stopped swarming preparations. In the majority of colonies, however, it was necessary to destroy eggs in queen-cell cups on two successive weekly inspections before these colonies gave up preparations for swarming. In other cases where colonies persisted in making preparations for swarming, the following swarm control measure, by manipulation of combs, was used:

In reality, it was the Demaree plan. The manipulation necessitated using a hive body with frames containing full sheets of foundation for each colony preparing to swarm. All queen cells containing larvae or eggs were destroyed. Five frames of foundation were removed from the center of this extra hive body. Five combs of brood, with bees shaken off to be sure the queen was left below, were taken out of the brood chamber and put into the center of the deep super from which the five frames with full sheets of foundation had been removed. This super was set aside temporarily and later placed on top of the comb honey supers over the inner cover with the center block removed so that the bees from below could enter this super and vice-versa. The five remaining combs in the brood chamber below were spread apart and alternated with the remaining five frames containing full sheets of foundation. In the brood chamber below there was then a comb of honey or brood, a frame containing full sheets of foundation, then a comb of brood and so on, making five frames with full sheets of foundation and five combs of brood.

In the majority of cases, this raising of brood and inserting frames of foundation between the remaining combs of brood stopped preparations for swarming. It was necessary, however, in two or three colonies, to repeat this manipulation before the colonies gave up the idea of swarming. This manipulation does take a little time, stops swarming in the majority of cases, and holds colonies together. The deep super placed on top of the comb-honey supers over an inner cover was removed soon after swarming preparations were given up and when the brood in this upper super had emerged. The bees were shaken off the combs at the hive entrance and the super was given to a colony operated for extracted honey production. It was necessary to destroy cells started in the top chamber on the ninth day to prevent virgins emerging from cells.

Top Supering for Comb Honey

The old method of placing the fresh super on the bottom of the pile and juggling the remaining supers around in order to get them properly filled and capped, is rather complicated, to say the least. Top supering is much simpler. We found that strong colonies during a good honey flow will occupy supers placed above filled and partly filled supers, as comb space is needed.

One advantage of top supering for comb honey is that there are less partly filled sections at the close of the honey flow than when the old so-called orthodox method of supering is used. When supers are placed on top, they are occupied if and when needed.

It is, of course, necessary to remove supers as soon as the sections are filled and capped to avoid having travel stained sections. During a good honey flow, it is necessary to examine supers at least once a week to see if any need to be removed, also to determine if more are needed. Top supering simply means putting fresh supers on top instead of underneath, directly over the brood chamber. The secret of top supering is to give supers in ample time to avoid congestion, especially at the beginning of the main honey flow.

(to be continued)

Simple Sounds Still the Honeybee

HOW BEES BEHAVE when exposed to simple sounds from this amplifier. H. Frank Little, of Montoursville, graduate student in zoology at the Pennsylvania State University, finds the honey bees remain still when he lifts a frame from the hive, so long as they are exposed to the sound. — Authenticated News, 170 Fifth Avenue, New York 10, N. Y.

DR HUBERT W. FRINGS and H. Franklin Little, of the Department of Zoology and Entomology at the Pennsylvania State University, explain that sound, as well as smoke, is effective in calming the bees while honey is removed from the hive.

While the sound equipment is more expensive than that used for smoke and may require the use of ear plugs, the sound would have some definite advantages. It would enable the beekeeper to have both hands free to work the hive and it would save the bees the trouble of ventilating the hive as they do after smoke is used.

Dr. Frings and Little, who is a graduate student from Montoursville, did much of their research on sound and bees at the Mount Desert Island Biological Laboratory at Salisbury Cove, Me., last summer and are continuing the study at Penn State.

They learned that sound at a frequency of 600 cycles per second and at 120 decibels was most effective. With sounds below 300 cycles or above 1000 cycles per second, the bees either showed slightly reduced activity or were not affected.

Sounds were produced by an audio oscillator through either a loud speaker or a microphone. The speakers usually were placed two to four feet from the hive but in some experiments were placed in contact with the hive.

Dr. Frings and Little point out that bees receive sounds as vibrations through their legs. The bees on the frames lifted from the hive remained still as long as the sound continued but the sound had no effect on bees in the field or those at the entrance to the hive.—Authenticated News.

JUST NEWS

(Continued from page 369)

Tuesday P. M.
1:30 Work in Apiaries to Observe:
a. general management practices
b. honey production
c. swarm control practices
d. to remove honey from colonies, with bee-escapes, carbolic acid cloths, and shaking

Tuesday Evening
7:30 Honey Producing Areas
Honey Plants (slides)
Movies

Wednesday A. M.
8:30 The Story of Beeswax —W. W. Clarke
9:15 Comb Honey Production —Edwin J. Anderson
9:45 Pollination—W. W. Clarke
10:30 Extracted Honey Production —Edwin J. Anderson
11:15 Swarm Control—J. M. Amos

Wednesday P. M.
1:30 Demonstrations
1. Shaking package bees
2. Introducing package bees
3. Transferring bees from a box to a modern hive

Wednesday Evening
7:30 Composition and Properties of Honey—Edwin J. Anderson
Sampling Kinds of Honey—W. W. Clarke
Movies

Thursday A. M.
8:30 Extracted Honey and Its Care —Edwin J. Anderson
9:15 Requeening—George Rea
10:00 Fall and Winter Management —W. W. Clarke
10:45 Queen Rearing—E. Anderson
11:30 Question Period

Thursday P. M.
1:30 Examining colonies in the apiary used for queen rearing and mating queens
Grafting in the apiary
Clipping queens and painting them with a colored lacquer
Removing honey
Making queen rearing equip.

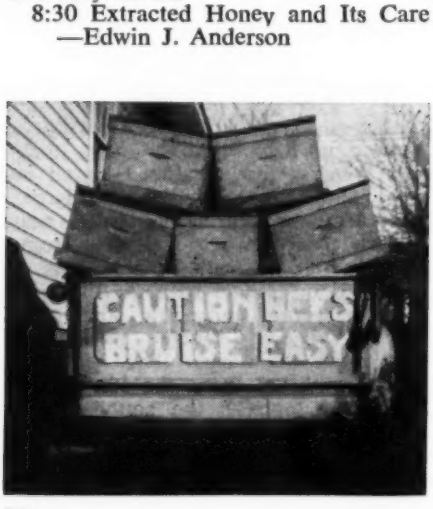
Thursday Evening
6:30 Banquet at the Autoport

Friday A. M.
8:30 Factors Affecting Resistance of Honeybees to AFB—J. M. Amos
9:00 History of Beekeeping—G. Rea
10:00 Marketing Honey —Edwin J. Anderson
11:00 Diseases of the Honeybee —W. W. Clarke

Friday P. M.
1:30 Extracting and bottling honey in the honey house
Grading comb honey
Wrapping comb honey
Bottling chunk honey
Working beeswax
Making creamed honey

The registration fee is $5.00 for Pennsylvania beekeepers and $7.50 for those from other states. To register, write F. C. Snyder, Director of Agr. Short Courses, Tyson Bldg., Pennsylvania State University, University Park, Pennsylvania.

(Continued on page 377)



It's An Idea

by M. H. STRICKER, Annandale, N. J.

A LITTLE publicity goes a long way to advertising your bee business. Here is a trick with the caption, "Caution—Bees Bruise Easy". Advertises the product and invites safer driving.

Buy and Sell

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 18c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month, preceding publication.

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WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

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CLOVER extracted honey in sixties. Abram Brubaker, Rt. 2, Lancaster, Pa.

ORANGE HONEY, also amber in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED—All grades of extracted honey. Send sample and price. Deer Creek Honey Farms, London, Ohio.

CASH FOR BEESWAX. Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse, N. Y.

WANTED—White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

BEST CASH DEAL for your honey (any grade) and beeswax. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

HONEY WANTED, all grades in 60's. Mail samples, advise quantity, best price. M. R. Cary Corp., 219 Washington Square, Syracuse 8, New York.

BEESWAX WANTED—Highest prices paid in cash or trade for bee supplies. The A. I. Root Company, Medina, Ohio; Council Bluffs, Iowa; San Antonio, Texas.

WRITE FOR Shipping tags and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. Walter T. Kelley Co., Clarkson, Kentucky.

WANTED: Light amber clover, fall flowers, buckwheat, and white clover. Send sample and lowest price. Cloverdale Honey Co., Fredonia, New York.

WANTED—Honey in 60-pound cans, also beeswax, any quantity. L. E. Allen, Tipton, Mich.

CASH for Amber and Buckwheat Honey. Best cash price for wax. Hubbard, Onsted, Michigan.

WANTED—Buckwheat and light amber honey. Eastern Food Products, 421 Bedford Ave., Brooklyn, N. Y.

WAX WORKERS renders and buys beeswax, manufactures plain and WAVYWIRED foundation. Prices and shipping tags on request. WAX WORKERS, Ithaca, N. Y.

WANTED, chunk comb and extracted honey. Mail sample and price. Stoller Honey Farms, Latty, Ohio.

WANTED—Amber Honey suitable for baking trade. Frank Fekel, Almond Rd., Vineland, N. J.

FOR SALE

WRITE FOR CATALOG—Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies and Comb Foundation. Onsted, Michigan.

THE BIGGEST BEE SUPPLY Catalog published (64 pages) free for the asking. Listing many items not found in other catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

FOR SALE—New heart cypress 10-frame bottom boards. KD, 10 or more, $1.00 each; 50 or more, 90 cents each; 100 or more 85 cents each. One nailed up sample postpaid, $1.25. Fred L. Poole, Elizabethtown, Rt. 2, Box 67, No. Car.

QUEENBEE PAINTING OUTFITS, $1.50 postpaid. Southwick Apiaries, Waban, Mass.

BEEKEEPERS—do your work the easy way. Save labor—increase profits by using Kruse Superlifter. Write for illustrated circular giving price. Kruse Superlifter, Pipestone, Minnesota, or Luck, Wis.

Selling equipment for 400 colonies, all good sound clean equipment, cheap. List of goods and price on request. Woodward Apiaries, Clarksville, N. Y.

FOR SALE—3 Root uncapping baskets, one tub. Ed Limbach, Silt, Colo.

FOR SALE: 12,000 5⅜-inch depth used shallow frames, mostly thin top bars. Excellent for chunk comb honey. R. Hausmann, Wheaton, Minn.

FOR SALE—20-frame Root extractor, used two seasons, $150.00. Root uncapping machine, $25.00. Donald Schmidt, Route 4, Bay City, Mich.

FOR SALE—3000 60-lb. good used cans, 25 cents each. You come and get them. Will not ship at above price. Honeymoon Products Co., 39 East Henry Street, River Rouge 18, Mich.

FOR SALE—Used extractors, 2-frame Reversible, 30-frame Radial, 4-frame Automatic; several honey tanks and pumps. Hubbard Apiaries, Manufacturers Bee Supplies and Comb Foundation, Onsted, Mich.

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Carloads and less than carloads. Mail sample and best prices in all grades.
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Oconomowoc, Wisconsin

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Quality and service guaranteed to please.
W. E. PLANT
HATTIESBURG, MISS.

Three-Banded Pure Italian Hybrid Package Bees and Queens
Write for prices.
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Italians **Caucasians**
Nice large queens, each 70c
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Oconomowoc, Wisconsin

CARNIOLAN and CAUCASIAN Bees for 1957. Booking queens. Each, $1.00; 2-pound bees with queen, $4.00; 3-pound bees with queen, $5.00. Lewis & Tillery Bee Co., Rt. 3, Box 251, Greenville, Alabama.

CAUCASIANS—Very hardy, good working, gentle bees. "Hastings" breeder queens used. Young laying queens, $1.25 each, any number. Fred Brock, McDonald, Tenn.

ITALIAN QUEENS. Selected honey-producing strain, carefully produced by 45-year experienced queen breeder. $1.00 each. Geo. H. Merrill, 302 Beatrice, Greenville, S. C.

PRODUCTIVE ITALIAN QUEENS—Ready June 25, $1.00 each. Shirl Baker, Rodney, Mich.

3-BANDED Italian and Carniolan bees and queens. 3-lb. with queen, $4.60; 5-lb. $6.60. Queens, $1.00. Luther Pickett, Efland, N. C.

FOR SALE—480 colonies in 10-frame hives, one 45-frame Simplicity extractor, 1 Root power uncapping knife, 2 honey tanks, Root make, one Hershizer wax press, 625 sets drawn combs.—Arlo A. Doenges, R. 6, Defiance, Ohio.

Dadant's Starline Hybrids and our regular strain of three-banded Italians. Real workers and very gentle; 1 to 25, $1.20; 25 to 100, $1.15; 100 up $1.10. Add 25c to each queen for Starline hybrids. Alamance Bee Company, Geo. E. Curtis & Sons, Graham, N. C.

SEEDS

HONEY PLANTS—Ask for catalog. One packet seed each 6 unusual honey plants, $1.00; Pellett Clover root divisions, 25, $2.00, 100, $5.00; postpaid. Pellett Gardens, Atlantic, Iowa.

HELP WANTED

WANTED—Beekeeper or helper to work bees. Summer in Ohio, winter in Florida. Wm. March, R.D. 3, Box 27, Mantua, Ohio.

HELP WANTED. One experienced or inexperienced. Big wages. Box 557, c/o Gleanings, Medina, Ohio.

WANTED

WANTED—Used empty hive bodies. Charles Jones, Hannibal, New York.

MISCELLANEOUS

FOR SALE—Royal Jelly and The Little Queen Royal Jelly Extractor. Royal Jelly Enterprises, 1017 Los Carneros Avenue, Napa, California.

ROYAL JELLY in capsules; box of 30 capsules with 10 milligrams, royal jelly, each $1.50 to beekeepers, retails for $3.00. Box of 30 capsules with 25 milligrams each, $2.50 to beekeepers, retails for $5.00. Prairie View Honey Co., 12303 12th St., Detroit 6, Mich.

ROYAL JELLY BEAUTY CREAM: 1 oz. royal jelly face cream, $3.00; in lots of 12, $20.00. 1 oz. Deluxe package royal jelly face cream, $5.00, 12 boxes, $38.00. Prepaid in the U. S. Prairie View Honey Co., Detroit 6, Michigan.

ROYAL JELLY—Fresh, pure, and natural. ½-oz., $9.00; 1 oz., $16.00. Special prices to doctors and cosmetic firms. ALSO HONEY ENRICHED WITH ROYAL JELLY, O. K. Anderson & Son, Box 193, Coffee Springs, Ala.

ROYAL JELLY CAPSULES, Api-Vitalex brand. Containers of 15 capsules, 50 milligrams each. $3.00 per container. Retail price $6.00. Minimum order 6 boxes. Single orders $4.50. Folders free. General Service Associates, Dept. GB, Box 6674, Dallas 19, Texas.

MAGAZINES

Archiv fur Bienkunde, International journal for Bee Culture and beekeeping economics. Founded in the fall of 1918. Oldest economic bee journal in the world. Praised again and again for its decades of independent leadership through many endorsements and advice as a valuable source also for the practice. Classic. Yearly DM 5.50. Any aspiring beekeeping friend will receive a sample copy. Biene-Verglag, Gielbach, Lindau, Germany.

Read the South African Bee Journal. Published every two months. Subscription 7/6 per year to the Treasurer, P. O. Box 3106, Cape Town, South Africa.

Know interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh Dist. Naini Tal, U.P. India or available through them. Subs. Rs9/ or 15 shillings or $2.25 yearly. Sample copy post free for Rs 1/8, or s2/6, or 40 cents (International Money Order). Payment in mint postage stamps of your country accepted.

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BEE WORLD, the international journal of the Bee Research Association published monthly, contains the latest research reports on bees and beekeeping. With **Apicultural Abstracts** it costs $5.50 per annum, or $6.00 including membership of the Bee Research Association. Apicultural Abstracts only $4.50 per annum from the Hon. Subscription Secretary, Bee Research Association, 10 Barnett Wood Lane, ASHTEAD, Surrey, England.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription $3.00. Box 189, San Angelo, Texas.

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THE AUSTRALASIAN BEEKEEPER

The senior beekeeping journal of the Southern Hemisphere provides a complete cover of all beekeeping topics in one of the world's largest honey producing countries. Published monthly by Pender Bros. Pty. Ltd. Box 20, P.O., Maitland, 3N, N.S.W., Australia. Subscription by Bank Draft or International M. O. 18/-(Approx. $2.15) per year, post free. Sample copy free on request.

"The Australian Bee Journal"
Published by the Victorian Apiarists' Association at the beginning of each month. **Subscription 10/-per annum plus 2/6 postage to overseas countries.**
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With reduced rail schedules, limited connections, and the threatened limitations on Mail Service, we have to plan all shipments to make connections for prompt delivery. This is only part of our service to you.
Other problems are always presenting themselves. We always keep you and your orders in mind and do the best possible to serve you.

May 20th Prices as follows:

	2-lb. w. Reg. qn.	3-lb. w. Reg. qn.
1-24	$4.00 each	$5.10 each
25-99	3.75 "	4.85 "
100 up	3.50 "	4.60 "
	Reg. queens	Is. Hybrid qns.
1-24	$1.15 each	$1.50 each
25-99	1.05 "	1.40 "
100 up	.95 "	1.30 "

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NORMAN'S ITALIAN QUEENS
Untested 70c each
Prompt Service

BRIGHT 3-BANDED ITALIAN QUEENS. Highest quality, purely mated, good producers. Safe arrival and satisfaction guaranteed. State health certificate furnished.

TESTED QUEENS	$1.40 each
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QUEENS

ITALIANS CAUCASIANS

For the rest of this season we will devote most of our time to producing good queens for your needs in making increase, requeening or for those queenless colonies you may have.

PRICES

Lots of:	Queens	2-lb. & Q.	3-lb. & Q.	4-lb. & Q.	5-lb. & Q.
1 - 24	$ .90	$3.75	$4.60	$5.45	$6.25
25-499	.80	3.25	4.10	4.95	5.75

Tested queens $2.00 each

THE STOVER APIARIES

Mayhew, Miss.

A TALK TO BEEKEEPERS

(Continued from page 365)

would use our heads a little more we could save our backs.

Putting on Supers in Time

Some beekeepers wait until the last minute before putting on supers. This is a mistake. It does no harm to put on supers with drawn combs a week or so in advance of the time they are needed, so that bees may become accustomed to occupying the combs. Then when the major honey flow does break the bees have learned to go up into the supers and will begin work in them.

However, it is inadvisable to give supers containing frames with full sheets of foundation too early, especially during a dearth of nectar. Bees during a nectar dearth may chew holes in the full sheets of foundation.

Don't Let Bees Starve

In some parts of the North there is a dearth of nectar that occurs between the spring and clover flows. Make sure all colonies have ample stores right up until the main flow begins. If there should be a cool spell of weather at that time some strong colonies may starve. Such colonies should be given one or two 10-pound pails of sugar syrup made from two parts sugar to one of water, or some combs of honey, if available.

When you find drones and drone brood being pushed out in the entrance of hives this is a sign of starvation. If you find young worker brood pupa, the colony may be dead or dying.

Errata

On page 287, May 1957 Gleanings under heading, "Length of Honeybees Stinger", the sentence should read "the worker can drive its stinger one-twelfth of an inch into a man's hand", instead of one-half inch.

SELECT
ITALIAN QUEENS
1-24 .....$1.40 each
25-49 ..... 1.20 each
50 & over .... 1.10 each
Queens shipped postpaid airmail. Live delivery guaranteed.
JOHN S. SHACKELFORD
Rio Oso, Calif.

HONEY EXTRACTING ON A SMALL SCALE

(Continued from page 337)

degrees F. before it reaches the final strainer.

The straining arrangement depicted will meet these requirements. The honey is transferred by pail from the extractor into a 60-pound can by pouring it through fly screen. The honey then flows through a 1¼-inch pipe which is wrapped with a soil cable and insulation. By controlling the flow of the honey out of this pipe into the strainer it is possible to raise the temperature of the honey to 100 degrees F. or more. A 60-foot 400-watt soil cable, if properly insulated, will raise 100 pounds of honey per hour by 18 degrees F.

The honey then passes through a straining cloth which is supported by a ¼-mesh screen placed in a suitable container fitted with a baffle up one side to remove the honey near the top. Straining in this manner helps to avoid air bubbles and prevents the material being strained from the honey from coming into immediate contact with the straining cloth.

The straining cloth is in the form of a round-bottomed bag made from two yards of No. 7282 sheer white nylon 42-inches wide. This material will be available at a reasonable price through most of the bee supply houses.

The strainer is elevated sufficiently to enable the honey from the baffle outlet to flow directly into a storage tank. The strainer and storage tank may be made from standard galvanized garbage cans similar to those in the illustrations.

THOSE GOOD WEAVER
ITALIAN QUEENS
$1.00 each
Weaver Apiaries, Navasota, Tex.

Booking orders now. Over 30 years a shipper. Send for Free Circulars.
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Whether you are a Commercial Beekeeper; a Sideline Beekeeper; or a Beginning Beekeeper, — you'll find what you want in ABJ. PLUS Science and Industry; Honey Plants; Meetings; Crops and Markets — AND your questions answered FREE.
Send for a sample copy.
American Bee Journal
HAMILTON, ILLINOIS

JUST NEWS

(Continued from page 372)

The **S. E. Minnesota Beekeepers' Association** will hold its summer picnic at Colville Park, Red Wing, Minnesota, on July 20 (Saturday). Potluck dinner will be served at the pavillion and all beekeepers and their families are cordially invited. Pack a hot dish or lunch of some sort and meet with a swell bunch of fellow beekeepers.—F. Q. (Quint) Bunch, Sec.

The following names are officers recently elected at the annual meeting of the **Connecticut Beekeepers' Association, Inc.:** President, Chester H. Niles, 35 New St., Mount Carmel, Conn.; Secretary, Mrs. Harry Powell, 1242 East St., New Britain, Conn.; Treasurer, Edwin LaBrake, 7 Main St., Woodbridge, Conn.; Publicity Chairman, P. J. Hewitt, Jr., Litchfield, Conn.; President of Ladies' Aux., Mrs. M. Louise Yates, 11 Chapman St., Hartford, Conn.—P. J. Hewitt, Jr., Chairman of Publicity.

U. S. Savings Bonds come in all sizes . . . . . and grow bigger every year.

WAX WORKERS

1330 Slaterville Road, Ithaca, New York

Successors to

Robinson's Wax Works

in 1954

Now wishes to announce that
Beeswax Rendering
Plain and Wavy-Wired Foundation
and Other Wax Products Manufacture
will be under the direction of

Dr. William L. Coggshall

(Formerly extension apiarist at Cornell University)

Italian Queens
EUGENE WALKER
Rt. 2, Box 207
Live Oak, California

LITTLE'S ITALIAN QUEENS
ROYAL JELLY

Booking orders for 1957 season.
1 to 24, $1.40; 25 to 99, $1.30; 99, up $1.20
Write for jelly prices.

LITTLE'S APIARIES

P.O. Box 122 Shelbyville, Tennessee

THE AUSTRALASIAN BEEKEEPER
The senior beekeeping journal of the Southern Hemisphere provides a complete cover of all beekeeping topics in one of the world's largest honey producing countries. Published monthly by Pender Bros. Pty. Ltd. Box 20, P. O., Maitland, 3N, N.S.W., Australia. Subscription by Bank Draft or International M. O. 18/-(approx. $2.15) per year, post free. Sample copy free on request.

FROM FOREIGN LANDS

(Continued from page 358)

Virgil's Georgic IV:

"The task is easy—but to clip the wings of their high-flying arbitrary kings."—Dryden translation, lines 161 & 162.

"Clip their king's wings".—Addison translation, line 126.

Mr. Schwoebel has shown that clipping the wings of queen bees is really an old custom.

Bee Publicity in Canada:

THE NEWSPAPER, "Ontario Government Services" published by the Department of Travel and Publicity in Toronto has devoted most of two pages to a well illustrated article on Ontario beekeeping problems. While bees are needed for fruit pollination they are finding going tough in South Ontario. The startling statement is made that by moving hives to northern Ontario during the summer, Ontario's beekeeping industry may be saved. The illustrations were provided by Dept. of Apiculture of the Ontario Agricultural College at Guelph.

Ontario Government Services. Vol. 8. No. 7.

XUM

York's Quality Bred
Package Bees and Queens

The Preference of Leading Honey Producers
Your Choice of

Reg. U. S. Pat. Off.

Packages with Starline Queens				Packages with Italian Queens			
Quantity	1-24	25-99	100-up	Quantity	1-24	25-99	100 up
2-lb.	$4.55	$4.30	$4.05	2-lb.	$4.25	$4.00	$3.75
3-lb.	5.65	5.40	5.15	3-lb.	5.35	5.10	4.85
4-lb.	6.75	6.50	6.25	4-lb.	6.45	6.20	5.95
5-lb.	7.85	7.60	7.35	5-lb.	7.55	7.30	7.05
Extra Queens				Extra Queens			
Starline	1.70	1.60	1.50	Italian	1.40	1.30	1.20

Queenless packages — deduct $1.00 per package
Tested Queens, add $1.00 per package or extra queen

TERMS: Shipments are made FOB Jesup by express, parcel post, or your truck. Bees are certified bees from our own apiaries, state registered, and state inspected. If convenient, small orders cash, and larger orders $1.00 deposit per package with balance payable two weeks prior to shipment.

York Bee Company Jesup, Georgia

(The Universal Apiaries)

P. O. Box 300 412 W. Orange St. Phones 3522, 3320

WILBANK'S — ITALIAN QUEENS

For your summer and fall queen needs we offer you an outstanding Strain of Three-Band Italians and can furnish Select Young Laying Queens promptly on receipt of your order. Caged fresh from our yards and Rushed to you Prepaid by Air Mail

Prices

1-9, $1.00 ea. 10-49, 90c ea. 50 up, 80c each
Tested Queens ..... $2.00 each
Quality Does Not Cost — It Pays

THE WILBANKS APIARIES Claxton, Georgia

SMITH'S QUEENS

Our selected three-banded queens will give you the BEST assurance of a honey crop. I personally rear these queens and give you only good queens. Requeen during summer and fall at the following low prices. You will be satisfied.

Selected Queens

1-9 ..... 85c 10-49 ..... 80c
50 or more ..... 75c each
3-lb. pkgs. with queen, $4.00 each
2-lb. pkgs. with queen, 3.00 each

N. B. SMITH & CO.
Calhoun, Alabama

QUALITY BRED ITALIAN QUEENS

Breeders selected from our Michigan Apiaries for high production and hardiness.

Queens .....$1.00 each
After May 20th ... .75 each

All queens shipped Air Mail. No more packages this season.

Walter D. Leverette Apiaries
P.O. BOX 364 FT. PIERCE, FLA.

ALWAYS BEST
AHEAD OF THE REST
BERRY'S

"Old Reliable" Strain
Italian Bees
STANDARD OF THE
BEEKEEPING PROFESSION

Definitely, the **PREFERRED** stock of **MAJOR SUCCESSFUL HONEY PRODUCERS** the **WORLD** over. **INSURE** your crop with young, vigorous, producing, **DEPENDABLE BERRY BEES.** Sixty two years of **SELECT** breeding.

(Prices after June 1st)

Quantity	Qns.	2-lb	3-lb.	4-lb.	5-lb.
1-24	85c	$2.75	$3.75	$4.75	$5.75
25-99	80c	2.65	3.65	4.65	5.65
100-up	75c	2.55	3.55	4.55	5.55

(For Queenless or Booster Packages Deduct 75c each)

M. C. BERRY & SON

P. O. Box 684 Montgomery, Ala.

FLOWERS' QUALITY ITALIANS

That stand the test for honey-gatherers; gentle; prolific; bred from hives making 300 pounds, or over of honey. Health certificate with each shipment. Prompt live delivery guaranteed. All packages with young laying queens F.O.B. Jesup.

3-lb. pkg. with queen $3.25
4-lb. pkg. with queen 4.00
QUEENS: 1 to 99, 75c 100 up, 65c
1 or 1000
Tested Queens $1.50

ALL QUEENS AIRMAIL DELIVERED.

Phone Juno 4-2830 or Juno 4-2837

FLOWERS BEE COMPANY
Jesup, Georgia U.S.A.

SUMMER PRICES
QUEENS OF QUALITY
1-24 .....90c each
25-up .....80c each
J. F. McVAY
JACKSON, ALA.

J. E. WING & SONS
43 Years Continuous Service
Italian Package Bees
and Queens
Our Specialty
Knights Landing, Calif.

ITALIAN QUEENS
22 YEARS QUEEN BREEDING
Write for special prices.
Will have them till Oct. 1st.
AUTAUGA BEE FARM
J. H. MOODY, Owner
Box 413 Prattville, Ala. Phone: Emerson 5-4202

SOLD out of all
Bees & Queens
for 1957
CLOVERLINE APIARIES
P. O. Box 5126
COLUMBIA, S. C.

Canada's
National Monthly Magazine
for Beekeepers
Canadian Bee Journal
Streetsville, Ontario, Canada

DELICIOUS DESERTS

(Continued from page 356)

boil, stirring constantly. Boil until clear and transparent. Remove from heat, add coloring and honey. Stir well and cool. Makes one cup.

Honey Raisin Bread Pudding

Six slices day-old bread, ½ cup melted butter, 4 eggs, ⅓ cup honey, ¼ teaspoon salt, 1 teaspoon vanilla, 4 cups milk, ¾ cup raisins, and ½ teaspoon cinnamon.

Toast bread lightly and cut each slice into three strips. Place in greased baking dish, 12 x 8-inches. Pour melted butter over strips. Beat eggs only enough to blend, add honey, salt, vanilla, and 1 cup milk. Scald remaining milk and stir into egg mixture. Pour over bread in baking dish and sprinkle with raisins and cinnamon. Bake about 60 minutes in a slow oven, 300 degrees, or until a knife inserted in the center comes out clean. Serve warm. Yield: 6 servings.

QUEENS

JENSEN SAYS:
Ideal conditions resulting in the BEST queens of the season NOW. They are wonderful! Full of Vim, Vigor, and Vitality. If you are desirous of getting the utmost QUALITY in the queens you buy, we can assure complete satisfaction; "A few cents can make a whale of a difference."
Don't gamble with queens of mediocre stock, lacking breeding background. 42 years con inued commercial queen-rearing experience behind our queens. Our reputation for fair dealings is your guarantee of QUALITY plus SERVICE.

DADANT'S STARLINE HYBRIDS
Reg. U. S. Pat. Off.

PRICES for Balance of Season:

Dadant "Starline" Hybrids		Jensen's "Magnolia State" Italians	
1-24	$1.35	1-24	$1.10
25-99	1.25	25-99	1.05
100-up	1.10	100-up	1.00

Clipped and Marked FREE. Air Mail Postpaid. Wire orders usually within 24 hours. Telephone 122M or 170J.

JENSEN'S APIARIES MACON, MISS. U.S.A.

HIGH QUALITY ITALIAN QUEENS
By air mail
75c each 10 .... $7.00 100 .... $65.00
These prices after June 5th
CARLUS T. HARPER, New Brockton, Ala.

A STEAM BOILER FOR THE SMALL BEEKEEPER

(Continued from page 348)

it should always be melted or boiled with water. Wax boiled in rusty tins or iron vessels has a dirty brown appearance; contact with galvanized iron or zinc turns it grey or copper green." (From the book, "Beekeeping in Victoria", Pender Bros., Australia. Temporarily out of print.)

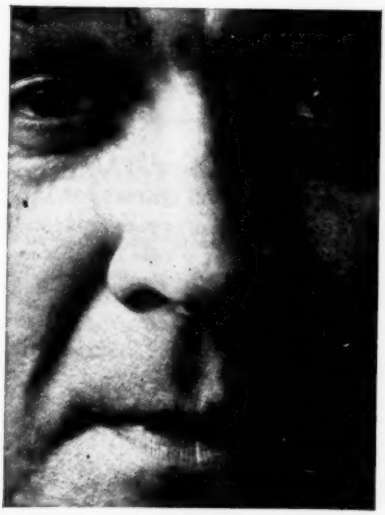
A list of some companies making upright boilers and having catalogs or literature available are as follows:

Erie City Iron Works, Erie, Pa.
Hamburg Boiler Works, Inc., Hamburg (Berks Co.) Pa.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
The Hapman-Dutton Company, 630 Gibson St., Kalamazoo, Mich.

Boiler parts are available from a few companies:

The South Bend Supply Co., South Bend, Indiana
The Brownell Co., Dayton 1, Ohio
Orr & Sembower, Inc., Reading, Pa.
Hoffman Specialty Mfg. Corp., 1700 W. 10th St., Indianapolis 7, Ind.
J. Edwin Aspinall Co., 1941 East 30th St., Indianapolis 18, Ind. This company is a distributor for the Hoffman Specialty Mfg. Corp.

A free booklet listing all the active boiler companies in the United States can be obtained from the following address: The National Board of Boiler and Pressure Vessel Inspectors, C. O. Myers, Sec.-Treas., 1155 N. High St., Columbus, Ohio.



Are your chances against cancer any better today?

The answer's yes . . . IF! Formerly, we could cure one out of every 4 cancer patients. Today, it's one out of 3. So why the big IF? Because the odds against cancer depend on you. Only *you* can give us the money we need to keep research going full speed. Remember, time is *everything* with cancer. Send a check *now* to "Cancer", care of your local Post Office.

American Cancer Society

Now - - QUEEN TIME. Time for QUALITY QUEENS - -

Values of **Real** Old-Time "Hard Dollar", at prices everybody can now afford - with

DADANT STARLINE Hybrid Queens

1-24	$1.30
25-99	1.20
100-up	1.10

GARON'S 3-BANDED Italian Queens

1-24	90c
25-299	80c
300-up	75c

DADANT'S STARLINE HYBRIDS
Reg. U. S. Pat. Off.

Upon request, queens clipped, marked, or clipped and marked free.

GARON BEE COMPANY **Donaldsonville, La.**

ITALIAN. . . ."GULF BREEZE". . . .QUEENS

As of this date, GULF BREEZE queens have enjoyed the largest demand on record. The reason is obvious. They are good and our service prompt. Large capacity.

PRICES:

1-24, 90c each 25-100, 80c each 100 or more, 75c each

BESSONET BEE COMPANY **Donaldsonville, La.**

CAUCASIAN or ITALIAN
Package Bees and Queens for 1957

Gentle bees, less swarming, good producers, health certificate and live arrival guaranteed are just a few things you get when your requirements are sent to me. No extra charges on orders booked in advance.

	1-25	25-50	50-100
2-lb. pkg. w/q	$3.00	$2.90	$2.80
3-lb. pkg. w/q	4.00	3.85	3.75
4-lb. pkg. w/q	5.00	4.80	4.60
5-lb. pkg. w/q	6.00	5.75	5.50
Queens	.80	.75	.65

FARRIS HOMAN
SHANNON, MISS.

CARNIOLAN and CAUCASIAN QUEENS

Now is a good time to requeen swarms and make increase with high producing and gentle Carniolan or Caucasian queens.

Queens ....$1.35 each, air mail
Discount on quantity.
$2.00 to foreign countries

W. D. REAMS
Box 87 LaBelle, Fla.

MOUNTAIN GRAY CAUCASIAN QUEENS
Personal raised, $1.10 each, 15 up
ELBERT S. CHILDS
201 Garden Ave. Knoxville 18, Tenn.

SUE BEE SAYS:
Dont' Lose Part of Your Crop for Lack of Equipment.

We have a large supply of hives, supers, frames, and SUE BEE FOUNDATION in all sizes ready for immediate shipment.

Standard Frames, 50	$6.25
Standard Hive Bodies, 5	9.95
6⅝ Supers Empty, 5	8.65
8" Hive Tool	1.25
Folding Veil	1.50
Smokers	2.65

SIOUX HONEY ASSO.

Sioux City, Ia. Lima, Ohio Waycross, Ga.
Anaheim, Calif. Rogers, Texas
Tacoma, Wash.

Orders are Going Out on Time

ITALIAN BEES and QUEENS

2-lb. pkg. w/qns.	$3.00 any number
3-lb. pkg. w/qns.	4.00 any number
Untested queens	.75 each
100 or more	.65 each
Tested queens	1.50 any number
Larger pkgs., add	1.00 per pound

- Prompt delivery
- More honey from bees
- Satisfaction in every way

Delivered prices on request. Above prices are F.O.B. except queens which are delivered by mail.

If you need more information, write us please.

MERRILL BEE COMPANY

P.O. Box 115, State Line, Mississippi

BETTER-BRED QUEENS **Three-Banded Italians**

Our "Better-Bred" stock will please you. The quality you want is there. We have a large supply to fill your order promptly. Use them, and get the results desired. **Any quantity, 70 cents each.**

CALVERT APIARIES **Calvert, Alabama**

Caucasian Queens

1 to 9	$1.20
10 to 48	1.10
50 and up	1.00

Howard Weaver

Navasota, Texas

QUEENS
By Return Mail
BRIGHT 3-BANDED
ITALIANS 75c

KEEP US IN MIND for fine quality bees and queens. They are gentle, prolific, and honey producers.

2-lb. pkg. with queen	$3.00
3-lb. pkg. with queen	4.00
Tested queens	1.50

All queens postpaid. Packages F.O.B.

NORMAN BROS. APIARIES
Ramer, Ala.

U. S. Savings Bonds come in all sizes . . . . .
and grow bigger every year.

Look for this Sign
When you Want
QUALITY AT LOW COST

Trade Mk. Reg.
U. S. Pat. Off.

KELLEY — "The Bee Man"

QUEENS

KELLEY ISLAND queens by the thousand are available now. If you are in a rush count on us for quick shipment by return air mail.

1-24 ..... 85c by prepaid air mail

25-up ..... 75c by prepaid air mail

THE WALTER T. KELLEY CO. Clarkson, Ky.

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